SEPTEMBER 3, 1960
VOL. 159 — NO. 10

Telephony®

THE JOURNAL OF THE TELEPHONE INDUSTRY

LONG-SPAN PLANT

A long-span (note the distance between poles) in new concept of aerial insulated wire plant recently adopted by Tyler (Minn.) Telephone Co. See article, page 21.

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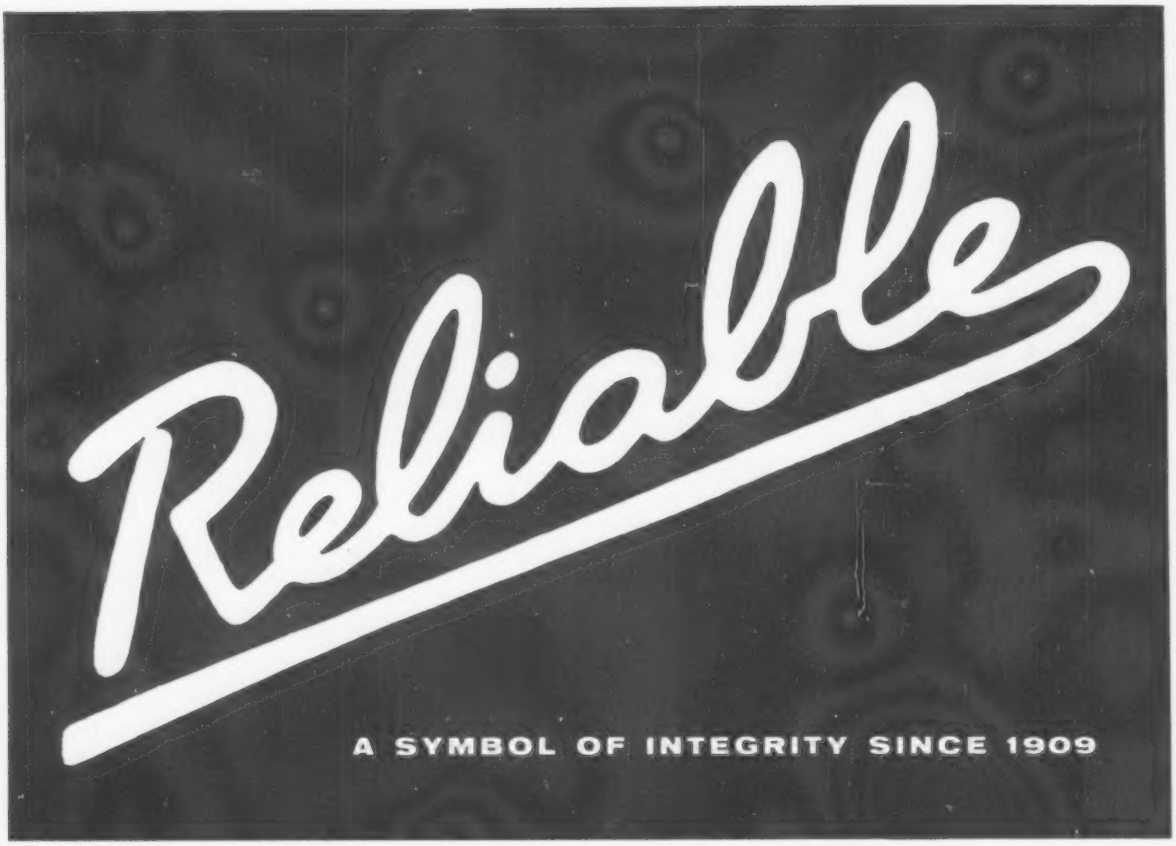

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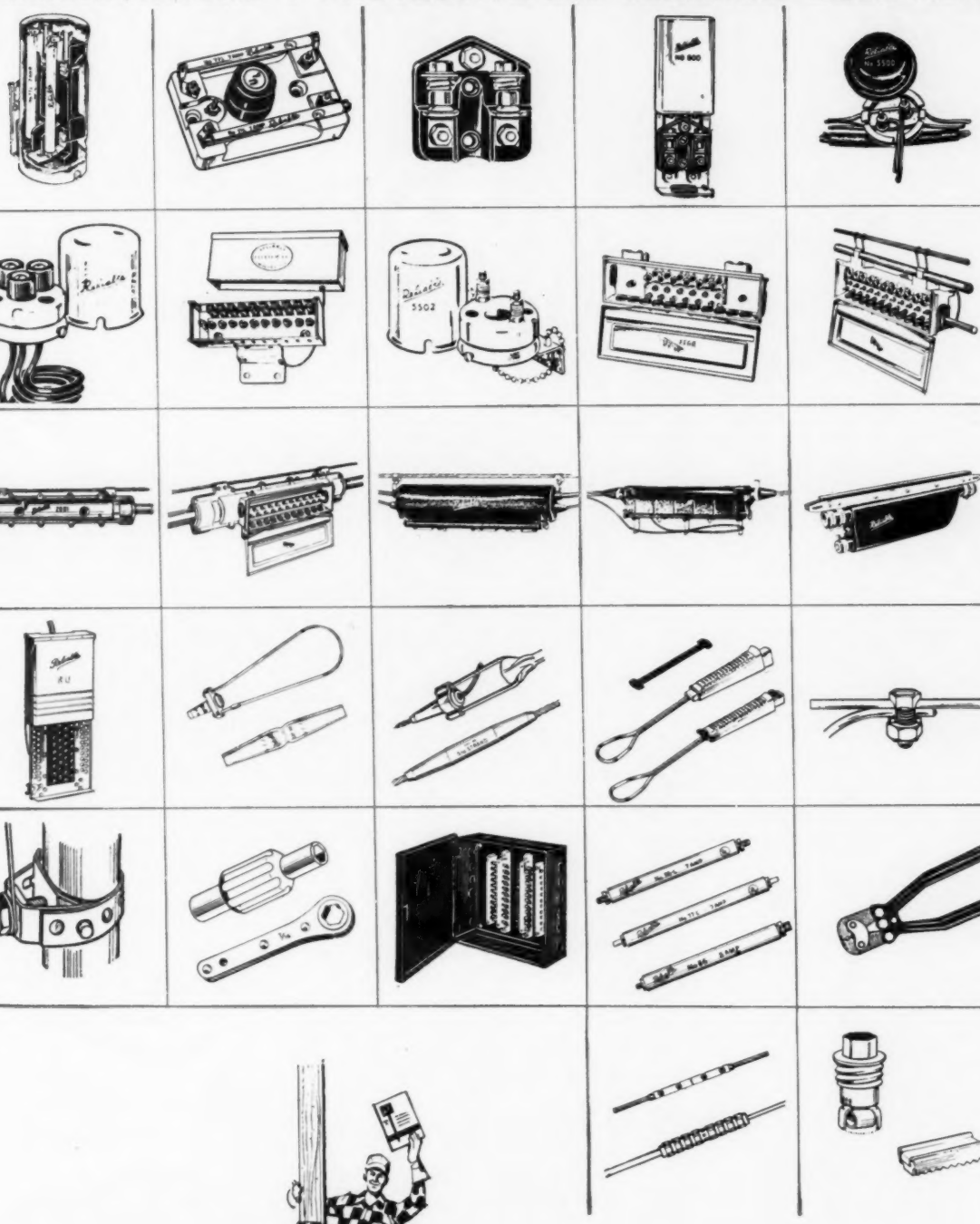

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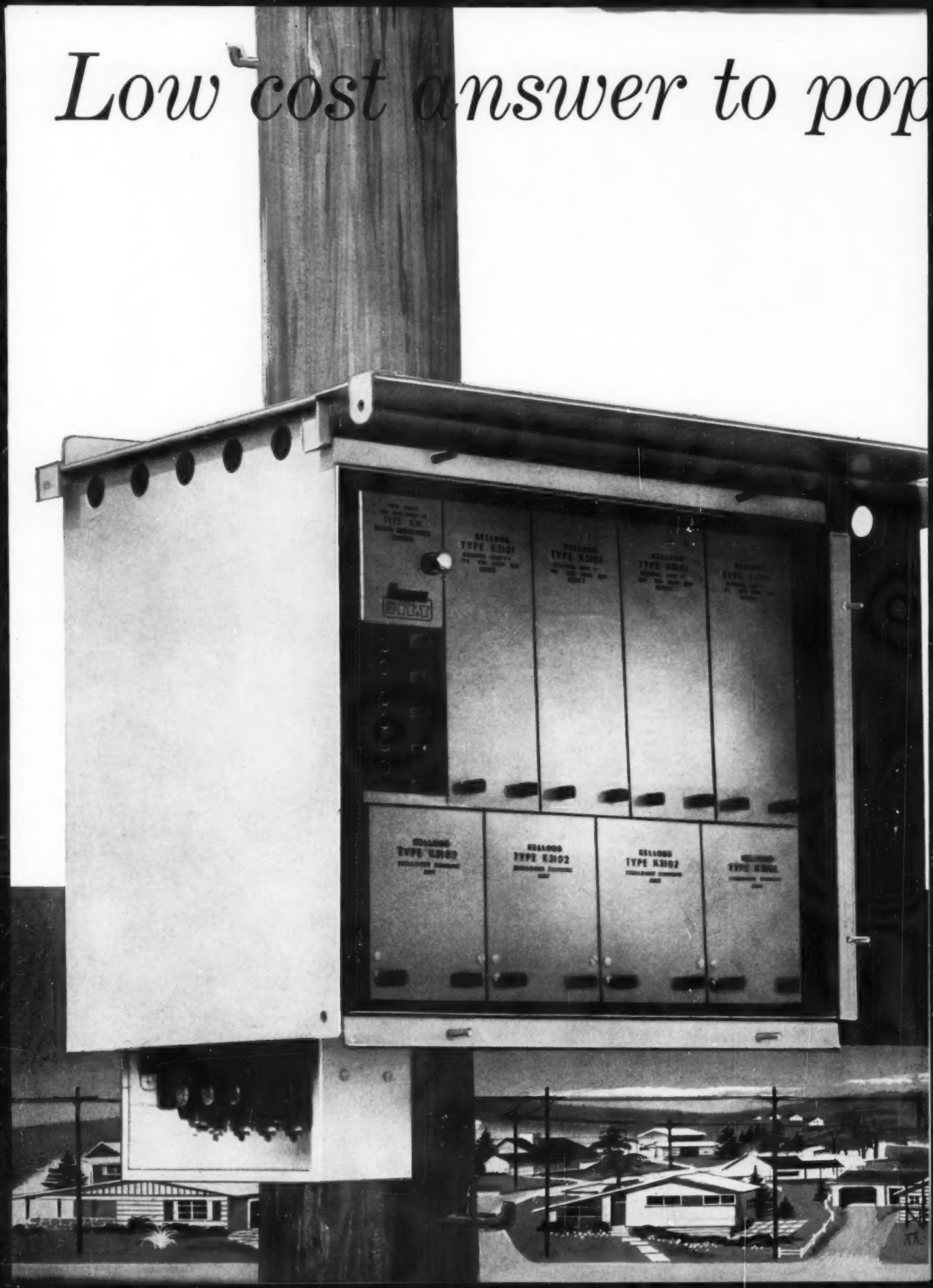

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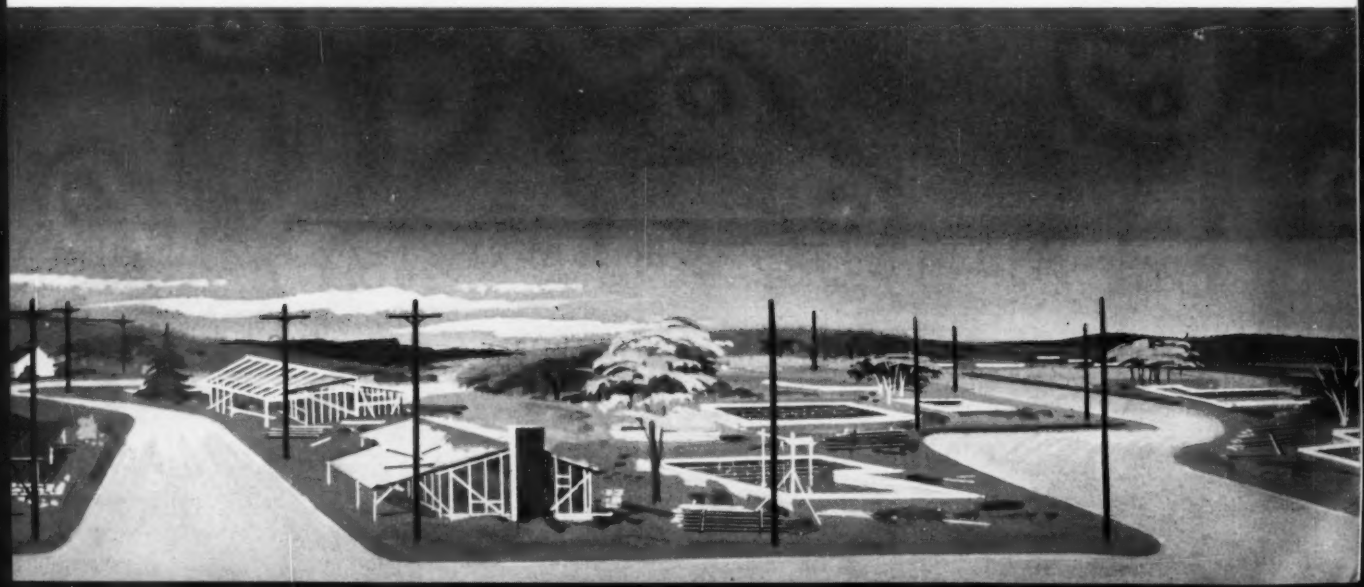

FLASHES AND PLUGS

NO PYGMIES FOR HIM! In these days when satellites are making passes in the skies, for those who look to watch, the wonders of such communication are less astonishing to children than to their parents.

Illinois Bell's *Telebriefs* reports this story:

Youngsters are sticklers for 100 per cent accuracy, which could be the moral of this tale. A lad was being particularly attentive as the telephone man demonstrating types of equipment for a group of visitors described the microwaves that speed calls through the air without wires.

"About how long are the waves?" inquired the boy.

"About the size of a cigarette," answered the telephone man.

"Regular," demanded the boy, "or king size?"

•

A NUMBER TOO HOT TO DIAL. The Southwestern Bell Telephone Co. *News* reports that an Abilene, Tex., paystation customer changed his mind in a hurry about making his call.

As he was looking up the number in the directory, the directory caught fire!

Flames which had broken out in the attic of a drive-in restaurant adjacent to the booth sent sparks suddenly showering down on the book.

The customer, unhurt, dropped the directory and ran.

The damage was attributed to a short-circuited neon sign.

•

LOQUACIOUS LAMP. A sociable country gentleman walked across the fields to eat dinner with his neighbor one evening.

Knowing that it would be pitch dark when he returned home, he took with him his lantern from the stable.

The two men talked, and since talking made them thirsty, they imbibed a little freely. Around midnight the visitor decided to stagger home, guided by his lantern.

Next morning his neighbor telephoned, saying: "I am returning your stable lantern. Please send back my parrot and cage."

•

VOICE WITH A SNORE. The Associated Press reported recently that Lansing, Mich. police were asked to investigate when worried customers reported that they could get no answer from the operator of a local telephone answering service.

Police checked and said everything was OK. The operator had just fallen asleep at the switchboard.

CHANGE OF ADDRESS

Please notify your local postmaster and the Circulation Department of TELEPHONY of change of address. Change cannot be made without the old as well as the new address. Allow three weeks for change of address to become effective.

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY
Since 1901

September 3, 1960

CONTENTS

IN THE NATION'S CAPITAL 19
By Francis X. Welch
1960 CONVENTION CALENDAR 20
LONG-SPAN INSULATED WIRE PLANT 21
By Ray Blain
COMPACT CARS CUT COSTS 24
REA APPROVES 7 TELEPHONE LOANS TOTALING $7,557,000 26
TODAY'S HIGHLIGHTS OF FINANCE, TAXES, BUSINESS TRENDS 27
By Willard F. Stanley
THE WOMAN'S PLACE 29
By Dianne P. Drucker and Helen Hardin
THE PLANT MAN'S NOTEBOOK 31
By Ray Blain
PLANT MAN'S QUIZ 32
By Ray Blain
COURTS AND COMMISSIONS 33
DO-IT-YOURSELF C.O. PRINT TABLE 36
By Doug Plaskett
USITA ANNOUNCES 2 MORE SPEAKERS FOR CONVENTION 37
THE OPERATOR'S CORNER 40
By Mayme Workman
NEWS ON NEW PRODUCTS 42

H. D. FARGO JR., *President and Director of Advertising* • A. J. STULTS, *Vice President and Advertising Manager* • R. C. RENO, *Vice President and Editor* • DAN S. FARGO, *Vice President and Managing Editor* • DIANNE P. DRUCKER, *Associate Editor* • HELEN HARDIN, *Associate Editor* • FRANCIS X. WELCH, *Washington Editor* • RAY BLAIN, *Technical Editorial Director* • PAUL E. MURPHY, *Electronics Editor* • MAYME WORKMAN, *Traffic Editor* • VIVIAN RYDEN, *Circulation Manager.*

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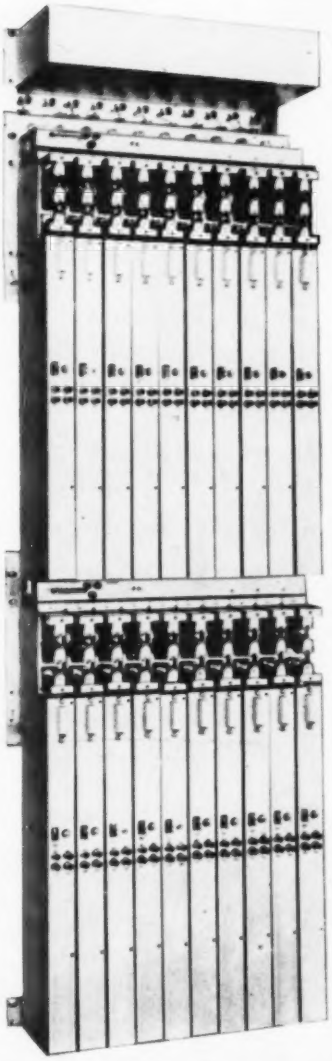

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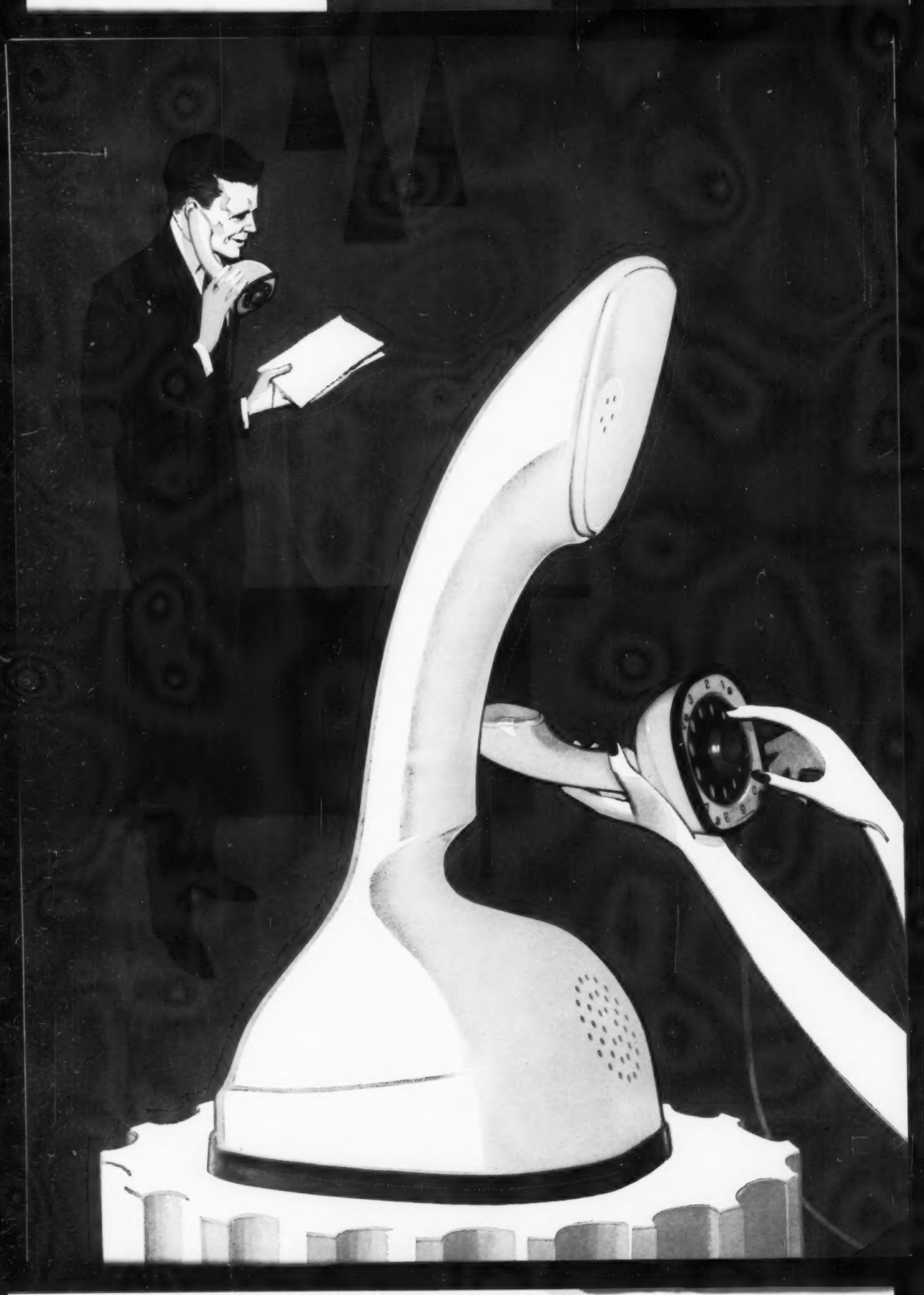

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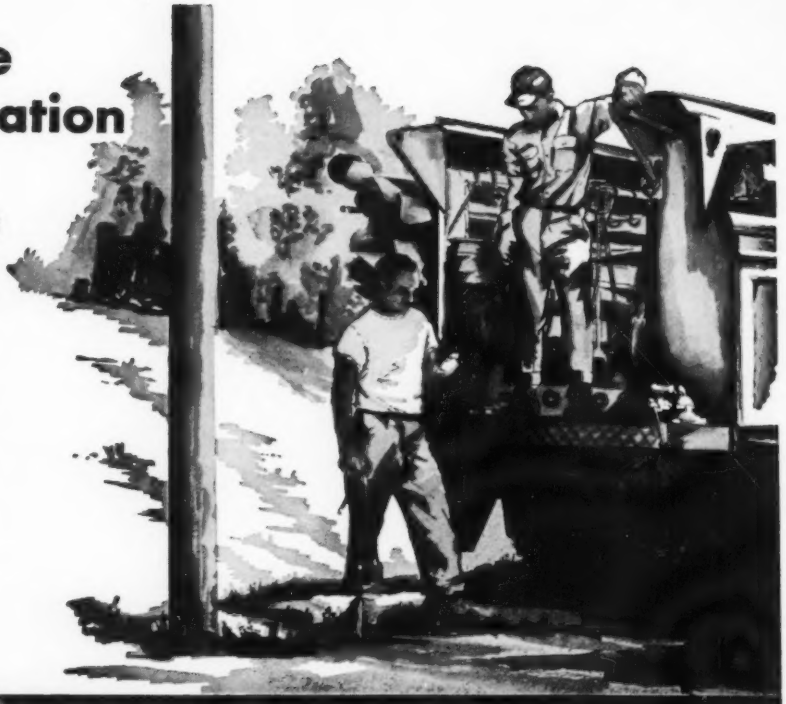

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The 533 Power Supply is designed to fit within a 105-B Apparatus Box. The power supply bracket includes the required socket and space to mount a single ALTEC transistorized repeater type 449, 450 or 453-A and, at reduced power, the 447-A. Operating from 117 volts AC the unit delivers 20 v at 25 ma. Write for Bulletin #13132.

The 12910 panel is provided to mount 10 amplifiers or Altec line Equalizers. The panel is 1¾" in height.

For complete information about Altec telephone and paging equipment, write to the address below or call 714-PRospect 4-2900 in Anaheim.

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It's much faster than you can wink an eye, yet time enough for Bell Laboratories' new high-speed switching terminal to transfer your voice to another channel while you are talking by telephone.

The new terminal—recently introduced on the transatlantic cable—uses the idle time in the conversations of talkers on a group of channels to provide paths for other talkers. This time-sharing technique, called Time Assignment Speech Interpolation, permits the sending of 72 simultaneous phone conversations over this deep-sea system where only 36 could be sent before.

TASI takes advantage of the fact that in a normal telephone conversation you actually talk less than half the time. You do not talk when you are listening, and even when you do talk there are pauses between sentences, words, and syllables. When there are more talkers than channels, TASI puts this idle time to use.

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The TASI switching terminal was rendered feasible by the transistor—an invention of Bell Telephone Laboratories. More than 16,000 transistors are employed to achieve the compact, dependable, high-speed circuitry required. TASI is another example of how Bell Laboratories works to keep your telephone service the world's finest.

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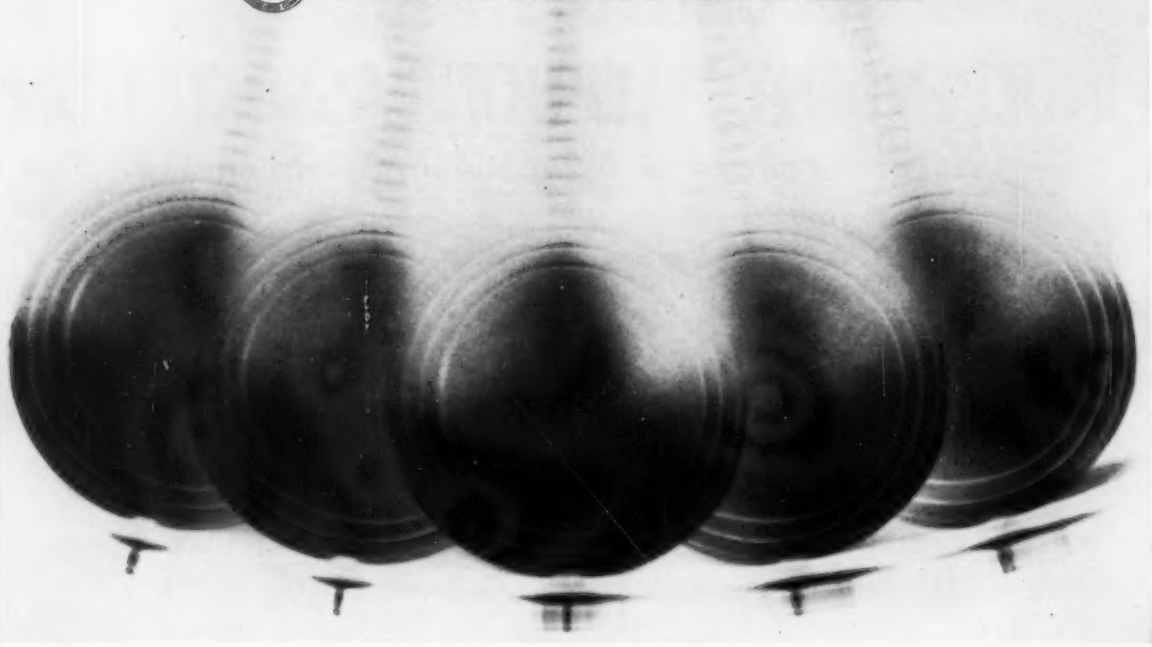

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IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH, WASHINGTON EDITOR
AND EDITOR, PUBLIC UTILITIES FORTNIGHTLY

Post-convention session of Congress seen as a "dud." . . . Wage-Hour Bill caught in back-of-seenes horse trading. . . . Bills changing Federal Communications Act sure to pass. Telephone stocks popular.

BY THE TIME these lines appear in print, the 86th Congress will either be home or on the way home to the bosoms of their constituents. Whether this news excites alleluias or a vast lack of enthusiasm, the fact remains that the August post-convention session has pretty well lived up to its advance billing. In other words, it has been a dud.

Just what congressional leaders ever expected to accomplish in the politically charged atmosphere of a post-convention short session is a mystery. Such sessions have been tried on rare occasions in our history and they rarely roduced very much, even under pres- ure of war er ergency. Sen. Lyndon nson, Majority Leader, is the one erally given credit (if you will par- the expression) for the idea of ng Congress reassemble after the ntions. But in all fairness to the ocratic vice presidential candidate, must be recalled that he did not have uch choice when confronted with the necessity for making some kind of a face-saving explanation for adjourning Congress in time to hold conventions at all. The present Congress has been dawdling all year; and didn't do much better last year (first session of 1959).

It probably crossed the mind of Senator Kennedy, the Democratic pr dential champion, that there was ough of a chance to push through some major legislation to do the country some good, and do his forthcoming campaign no harm. But even "Happy Jack" seemed pretty discouraged toward the end, when he suggested on Aug. 24 that Congress might as well close up shop and go home then.

The Republicans on their side do not have anything better than the negative record for a holding operation, and some one-sided defeats on such votes as the Javits amendment for the medical aid bill for the aged. Confronted with the danger of close votes on possible White House vetoes, the GOP members are probably just as glad to get home to their campaign chores as the Democrats.

And so the "August session" is being shooed into the back room of our history, like an unwanted child, by both parties. Did either side gain any political advantage? The answer seems to be no. President Eisenhower was saved by some narrow squeaks from the responsibility of vetoing presumably popular "social legislation." But the Republican congressmen will have to face the charge outside of the southern states of "conspiring" with conservatives to thwart such proposals. As for the Democrats, their performance at the closing session suggests the proverbial army that marched up the hill, and then marched down again.

As these lines were written, the Wage-Hour Bill had been submitted to conference between the Senate and the H use after some hectic back-of-scenes ho e trading. The trading involved not only the Wage-Hour Bill but the House bill and federal aid to schools. As usual, in the last days of the session, tough old Judge Smith of Virginia was riding herd again in the House Rules Committee, and having pretty much his own way about what should get out on the floor of Congress and what should not.

And, so, the time factor catches your correspondent over a barrel as far as discussing in this issue what will finally emerge in the way of a Wage-Hour Bill. The best to be predicted, in such a spot, would be that *a bill would emerge*—something between the Kennedy Bill in the Senate (which boosts the minimum to $1.25 an hour, and just about scuttles the small exchange telephone operators' exemption) and the House bill (which boosts the present $1.00 minimum to $1.15 and lets the telephone operators' exemption alone). Next week in this department we shall be able to discuss what finally happened. Senate Minority Leader Dirksen was insisting as late as Aug. 26 that there would be no bill enacted at all. He could be right.

Perhaps it is just as well that many of the serious issues thrown at Congress in such a hectic bundle, labeled "must," should go unresolved. These questions are far too important to be settled in meeting by a rebellious Congress anxious to get on with its campaign program. Next year, after the ballotting in November has cleared the atmosphere, the climate will be more conducive to calm judgment and better legislation.

Meanwhile, the voters themselves can make up their minds what they really want. If the workers, for example, are dissatisfied with present health plans and want their pay clipped to pay for a new one, all they have to do is pull the little lever in appropriate numbers. The campaign offers a chance for

sponsors of all sorts of plans—good, bad, and indifferent—to explain and promote their ideas and to test public sentiment. So maybe it is all for the best that Congress decided to wind up an exercise in futility, and get on with the battle of the hustings.

FCC Act Changes

As predicted in this department earlier this year, Congress did not finally do very much in the way of changing the Federal Communications Act. Despite all the fuss and bombast which followed the disclosures of the Harris Sub-committee on Legislative Oversight, the past two years, the congressional mountain labored and brought forth two very small legislative mice.

One of these was a bill—still before the House but certain to be passed—to punish anybody who engages in rigging TV shows or accepts or pays so-called "payola" for undisclosed advertisements or preferences on TV or radio programs. While this does not concern telephone companies, as such, it does result in changing a section of the Federal Communications Act of 1934 which established the FCC and the general pattern of federal regulation of radio, telephone, telegraph, etc. The other minor change in the Federal Communications Act, which has already been signed by President Eisenhower, involves the so-called "equal time" provision of the law with respect to political broadcasts.

Before explaining these, it should be stated, in the interest of objectivity, that Congress could not be blamed for failing to rush in with hasty action on the far more extensive "regulatory reform" bills which have been introduced. These are the measures which are designed to streamline and improve regulatory procedure, not only before the FCC, but other regulatory commissions as well, and some of them would seriously reorganize the federal regulatory commissions as we know them.

Clearly, such far-reaching and important measures should not be jammed through at the tail end of a frantic short session. And the leadership did well to put them over until next year when the newly elected 87th Congress can deal with them in a more deliberate fashion.

The "anti-payola" bill, as it passed the Senate (S. 1898), is pretty long and complicated, even though limited in its effects. It provides certain fines and penalties and other forfeitures and punishment for any TV or radio licensee, or program producer or participant, who engages in phony quiz contests or broadcasts program material containing concealed advertising or other matter for which undisclosed payments or benefits have been made.

There was little opposition except as to technical details. In the opinion of this writer, the changes could not possibly affect telephone company operations under the Federal Communications Act. The suspension of the "equal time" provision of the Federal Communications Act was clearly a stopgap expediency adopted by Congress to permit the forthcoming campaign debates between Vice President Nixon and Senator Kennedy.

As readers of this department are aware, the previous provisions of the act required that radio and TV stations sell or give "equal time" to every avowed candidate, even of a tiny splinter party, to such an extent as to make intelligent political broadcasting and TV service during the campaign impractical, if not impossible. Even so, the resolution adopted and signed by the President is only temporary and suspends the "equal time" provision for the year 1960—which means the forthcoming presidential campaign.

Representative Harris, chairman of the House Interstate and Foreign Commerce Committee, sponsor of the resolution, explained that next year Congress will try to make a better and permanent job of this controversial reform. He pointed out that Congress did not want to scuttle or unfairly handicap real substantial third party movements. We have had such third party movements in this country. The Republican Party was born and developed as a third party movement over a hundred years ago. But the permanent reform along these lines is another painstaking and demanding job which Congress has wisely put off for a later date.

Self-regulation Over the Years

Probably the most constructive development to come out of the radio and TV scandals has been the emergence of a determination on the part of the broadcasting industry to regulate itself. We see increasing evidence of this, although all may not agree that the results are the best that can be obtained.

Word has already gone out to the TV program people to cut down on the crime waves and violence in the Westerns. In the radio field, commercial advertising necessities seem to be banishing the soap operas which used to burden the airwaves during the daylight hours with such a deluge of tasteless agony. As of Nov. 2, the last of the radio soap operas will fade away and die. Ma Perkins, Young Dr. Malone, the Second Mrs. Berton, and a

(Continued on page 52)

Convention Calendar

1960

Association	*Date*	*City*	*Hotel*
Arkansas	Sept. 12 and 13	Hot Springs	Velda Rose Motel
Michigan	Sept. 12 and 13	Mackinac Island	Grand
Rocky Mountain	Sept. 14, 15 and 16	Denver	Hilton
West Virginia	Sept. 19, 20 and 21	Morgantown	Morgan
Nevada	Sept. 21, 22 and 23	Las Vegas	Riviera
New England	Sept. 25, 26, 27 and 28	Bretton Woods, N. H.	Mt. Washington
North Carolina	Oct. 3 and 4	Pinehurst	Carolina
USITA	Oct. 9, 10, 11 and 12	Chicago	Conrad Hilton
South Carolina	Oct. 24 and 25	Clemson	Clemson House
Virginia	Oct. 27 and 28	Roanoke	Roanoke
Oklahoma	Nov. 9 and 10	Oklahoma City	Skirvin
Georgia	Nov. 9 and 10	Atlanta	Biltmore
Alabama	Nov. 14 and 15	Birmingham	Thomas Jefferson
Florida	Nov. 28 and 29	Jacksonville	Robert Meyer

Long-Span Insulated Wire Plant

By RAY BLAIN

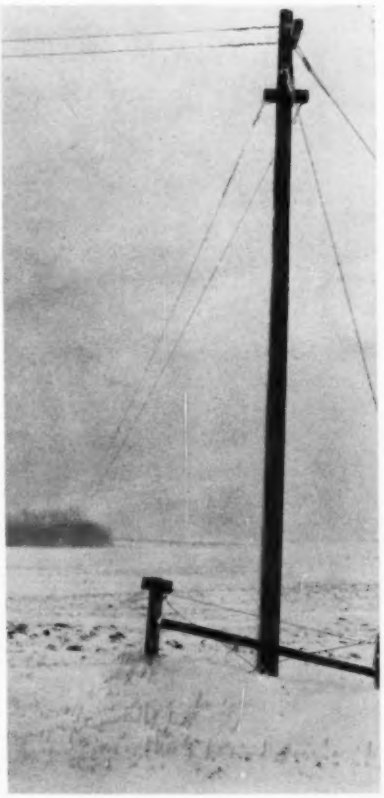
Minnesota Independent company adopts new design that limits conductor tension to 55 per cent of its breaking strength

THE CONCEPT of long-span aerial insulated wire plant is new and entirely different from that of the conventional open wire plant.

In the design of conventional open wire plant, storm loadings specified by the National Electric Safety Code (NESC) are generally observed. Under this concept, lines are designed so that the conductors will not be stressed under these assumed loadings beyond 85 per cent of their strength in the heavy loading zone, 75 per cent in the medium, and 60 per cent in the light loading zone. Pole heights are established to obtain ground clearances specified by NESC under initial sag conditions. The conductor is to be maintained to this sag by resagging operations after having experienced storm loadings. This is known as the "Maintenance Sag" method of construction. The pole heights required are selected on the basis of maintaining the sag with no reference to the loading sag of the conductors under the assumed loading conditions.

Under the concept of long-span insulated wire construction, the intent of the design is to (1) limit the amount of tension that can be placed on the conductor to 55 per cent of its breaking strength which will exceed only slightly the elastic limit of the conductor, and (2) to accomplish this by establishing the pole heights—and the points of conductor attachment on the pole—not only from the standpoint of meeting NESC ground clearance requirements under final unloaded conditions, but also to have the conductor come to rest on the ground at its mid-point under loaded conditions, and thus relieving the stress in the conductor by the time it reaches 55 per cent of its strength. Through the use of long-span construction, it is possible to design lines which can meet both of these criteria.

Obviously, in order to accomplish this concept the conductors utilized must be of high strength, the spans must be long, and provision must be made to permit attachment on the poles at the proper point to ensure that the conductors will meet both the clearance requirements under normal conditions and the tension limits under loaded conditions. The conductors to be utilized are to be insulated with 15 mils of polyethylene to eliminate mid-span hits. It should be pointed out that the actual amount of ice loading of conductors to achieve the tension limitations will vary according to the span length and will, therefore, bear no relation to assumed NESC storm loadings.



Wires pulled to ground by ice loading relieves strain on poles and anchors.

Since the conductor loading will not exceed 55 per cent of its breaking strength (its approximate elastic limit) the conductor will restore itself to approximately normal sag after the loading is removed. Maintenance sagging of conductors and damage resulting from ice loading should be virtually eliminated. In actual practice, since 55 per cent tension limitation will slightly exceed the elastic limit of conductors, a small amount of such permanent stretch has been recognized in the staking data selected and has been compensated for by allowing increased clearance of this amount. Accordingly, under final sag conditions, all clearance requirements of NESC will be met.

Presently, there are three different insulated conductors that can be considered suitable for use under this new concept. One is .109 Grade 195 galvanized steel-insulated wire and the others are: .080-25 per cent-151 and .095-22 per cent-151 copper-covered steel-insulated wire. These conductors have adequate strength for use of this long span concept.

Considerable thought has been given to adequate ground clearance with this system, and it has been determined that it should be engineered to provide a 14-foot ground clearance. The require-

Preformed dead-ends used on a buckarm pole.

ments of this clearance at 100 degrees Fahrenheit will meet all NESC clearance requirements except at road, highway, and railroad crossings. Insofar as road crossings, highway crossings, field entrances, etc., are concerned, adequate clearance is generally assured, even under loaded conditions, by locating poles immediately adjacent to these locations.

Railroad crossings which would require a short span should be made with a maximum span of 125 feet. Clearance requirements under these conditions can be met without any penalty under long-span construction since the flexing of poles supporting adjacent long spans under loaded conditions, coupled with the smaller amount of total ice loading in the short span, will prevent excessive tension in the short span under loaded conditions. Actually, the tension in a short span will be very nearly the same as that in adjacent long spans.

REA engineers suggest that this new type of long-span construction be considered for use on leads up to and including eight wires. On copper-steel single circuit leads, transpositions with a 4-inch point bracket should be located on each pole. On steel wire single circuit leads, transpositions should be located at every other pole. On multi-pair leads all pairs will be transposed at every pole with the following exceptions: Up to two pairs may be arranged for use of a limited amount of carrier by omitting transpositions at certain poles. It is recommended that on one of the two pairs, the transpositions be omitted at poles 32, 96, 160, 224, etc.

The lengths of insulated line wire are spliced with compression sleeves and taped with 10 mil tape. Insulated wire links can be used and do not require taping. Connections between insulated line wire and bridle wire are to be made with offset sleeves. These connections do not require taping. Insulated splints with bare conventional tie wire (.091 galvanized steel) are used with insulated line wire.

In using this new type of construction, it must be understood that it is applicable primarily in areas of the country which are reasonably level and in which the number of control points or poles per mile is relatively few, where the number of customers per mile is few, where the roads are straight and where there are relatively few angles in the line. These conditions are met in many of the plains states.

In the design of a line under this theory a determination should be made as to the most desirable span length to be used as an objective. This average span should be based on the economics of pole selection. The most economical pole cost per mile should be developed, considering the difference in costs of various sizes and lengths of poles re-

Stringing wire from boom so that truck can travel paved road.

ABOVE: Wire buried in snow but still in service.

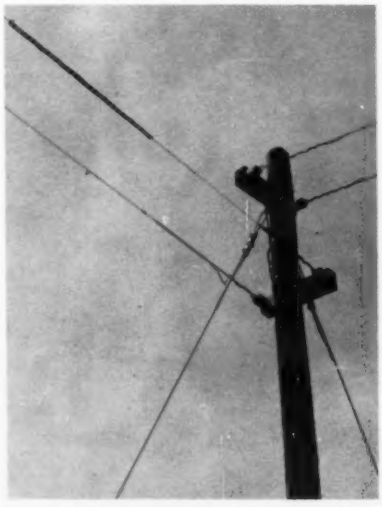
RIGHT: Linemen shoveling snow from buried wire.

quired for various average span lengths. In making this determination, consideration must also be given to the practicability of obtaining the various span lengths considered in the light of the number of control points, angles in the line, joint power crossing poles, customer location and special conditions, such as railroad crossings and other established necessary control points.

It should always be remembered that it is more important to provide the required ground clearance than to avoid exceeding slightly the maximum design tension limits. Or, in cases where NESC ground clearance is not controlling, the clearance to ground is to be reduced so that the conductor will be on the ground before reaching the design criteria of 55 per cent conductor tension.

The first field trial of this new concept was designed by REA with the assistance of Harold L. Ericson, owner and engineer of the Tyler (Minn.) Telephone Co. The first installation was made by the Tyler company, under the supervision of Mr. Ericson.

This installation consisted of about 450 wire miles and 50 pole line miles. The greater part of this plant has a carrier capability. The construction costs on this job averaged approximately 10 per cent less than the conventional type open wire line. Slightly less than seven Class 7, 25-foot poles were used per mile. The longest span is 1,900 feet and the average span is 900 feet. Conventional long-span open wire plant generally makes use of about 18 poles per mile with span lengths ranging upward to 350 feet.



Preformed deadends and vibration dampers installed on pole in Tyler long-span construction.

The first real test of this pilot installation occurred during the severe winter of 1959. During a severe storm as much as one half inch radial ice built up on the wires, causing them to sag to the ground. They remained buried under 3 feet of snow for about three months. There was no interruption of service during this period. The only case of trouble experienced—due to the storm—was caused by a conductor grounding on a barbed wire fence. This caused an interruption of service to only three subscribers for a few hours. Approximately 3,000 spans were in service and only 10 required resagging after the storm. This was due to anchors creeping. There were no conductor failures resulting from the storm and ice loading. There were a few fatigue failures earlier in the year which were corrected by a change in the design of the vibration dampers.

The first vibration dampers tried were installed, one in each span, and consisted of an 18-inch polyethylene tube. With this arrangement, an excessive number of fatigue failures oc-

(Continued on page 39)

Compact Cars Cut Costs

Ohio Bell experience indicates greater operating economies make compacts the car of tomorrow.

COMPACT CARS recently have attracted the attention of all telephone companies. This isn't to say that the compacts haven't been used before—certainly the American Motors and foreign entrants in this field set the stage for some of the compacts' acceptance. However, entry by other auto-makers greatly reinforced interest in compact cars.

One company using compacts on a broad basis is the Ohio Bell Telephone Co. They're testing:

American Motors' Nash Rambler American.
Chevrolet's Corvair.
Chrysler's Valiant.
Ford's Falcon.
Studebaker's Lark.

The Ohio Bell Magazine, edited by Robert L. Cromwell, in a recent issue stated: "As far as Ohio Bell is concerned, compact cars cut costs — and they're here to stay.

"With the exception of a few compact cars, first of which were purchased in the spring of 1958, the company's compact car fleet is only a few months old. Yet the small cars already represent 30 per cent of the total passenger cars in use. And the forecast is that within three years the compacts will make up 95 per cent of the total. So strong has been the switch that this year the company will purchase only one standard car for general use." (Mr. Cromwell points out that the article reflected only Ohio Bell's ideas and policies on compact cars, and not necessarily those opinions of the Bell System as a whole.)

Al Borchik, motor vehicle superintendent in Ohio Bell's northeastern area, said, "The policy is to use the compacts wherever they'll fit the job. They cost less to buy and less to run. And although it's too early to make predictions, there's no reason to believe our repair expenses on them will be any different from the standard size models."

It probably will take four years to completely determine how the compacts will work out, said William Thomas, the company's southwestern area motor vehicle superintendent. "By that time they'll be wearing out," he explained. "And we'll know what their trade-in value is. That's an important consideration in the overall cost picture."

Lower initial investment and greater gas economy are the two major factors in favor of the compacts. "Our initial cost averages $300 less for a compact car than for a standard model," said Mr. Borchik. "So far they've been very good on gas. In more than one million miles last year they averaged 23 miles per gallon. This compared with 14.5 for the standard cars."

Ohio Bell magazine reported no unusual maintenance problems or costly repairs have been encountered on the more than 300 compacts now in use. One car, used on a Dayton mail run, has been driven 95,000 miles without major repairs. It's still going good and strong. Other plus values are lower cost for parts, less antifreeze, less expensive tires—which wear longer because of the cars' lighter weight.

Another advantage: company parking areas stretch further. Five compacts can be parked in the space needed for four regular cars.

For Ohio Bell use of the little vehicles is a matter of dollars-and-cents economy. For that reason, since its initial entry into the compact field early in 1958, the company has purchased practically every model of the small economy cars manufactured in this country.

Jim Shore, sales engineer for the

Chevrolet Corvair is one of over 300 small economy cars now used by Ohio Bell.

LEFT: Easier maintenance makes compacts a favorite of Ohio Bell Cleveland mechanic Bill Gray. CENTER: Best suited for job is the company's New Lexington wire chief Ken Snider's opinion of compact cars. At Somerset, O. cable laying site, he extols compacts to John McCoy (left) and Al Calvert (center.) RIGHT: Smartest advance in his 30 years as a mechanic opines Bob Brown, Lancaster motor vehicle inspector.

company in Lancaster, O., has put almost 24,000 miles on his 1959 compact car in 18 months. The car has averaged more than 21 miles per gallon, and has had no major repairs. In fact not one cent was spent on it during its entire first year. The original tires are still in good condition, Mr. Shore reports.

"I find the car excellent on rough roads because of its unitized construction," he said. "It's really solid."

Ken Snider, the company's New Lexington wire chief, has driven his compact car 3,000 miles in three months, and reports he likes it better than his 1959 standard-size vehicle. He added:

"It's quieter, smoother and much easier to handle. So far it has averaged 23 miles per gallon.

"I don't mind the low power on hills. It's no problem if you watch your speed and don't lose momentum.

"Best thing I like, though, is its size; the easy entry, more headroom and bigger trunk space. Also its simple, bolt-on construction permits easy, inexpensive replacement of damaged parts —which also are cheaper."

Solid construction of the compacts and their rugged dependability have made them a favorite for plant use. Bob Brown, Lancaster motor vehicle inspector, also likes the engines. "They're easier to maintain and will take the punishment of hill country use," he said. "They're reliable and rugged, and so far give an average of 23 miles per gallon.

"These compacts are the smartest thing I've seen from Detroit in my 30 years as a mechanic. For once the car buyer is profiting from a revolution on economy and smaller size. I think we'll have them with us a long time. And I believe they'll prove to be one of our very best investments."

Easy handling of Corvair and other compacts in city traffic, plus parking ease, are among most-liked features. Some comment it's like having power steering. Least liked is the cramped interior space and smaller doors.

Smaller tires are easier to change, wear longer because of compact's light weight, Ohio Bell users point out.

On the open road compacts need more space to pass, and are slow on hills.

REA Approves 7 Telephone Loans Totaling $7,557,000

MORE THAN 14,000 subscribers in seven states will receive new or improved telephone service with the aid of seven loans approved during the week of Aug. 15 by the Rural Electrification Administration as follows:

Brandenburg (Ky.) Telephone Co.; $555,000; Aug. 15.

Funds will help to furnish initial service to 1,388 subscribers. This and previous REA loans will assist the borrower in furnishing new and improved service to 4,853 subscribers. The system will consist of eight dial exchanges which now provide service to approximately 3,300 of the subscribers.

•

Grand River Mutual Telephone Corp., Princeton, Mo.; $2,420,000; Aug. 15.

This loan will assist in improving service for 2,688 subscribers and in furnishing initial service to 883 subscribers in northwest Missouri and in southern Iowa.

The borrower has recently acquired with its own general funds and is now operating the following systems which serve 1,310 of the existing subscribers: The Worth Mutual Telephone Co., the New Hampton & Whitten Switch Telephone Co. and the McFall & New Hampton Telephone Co., all in Missouri. The remaining 1,378 of the existing subscribers are served by 13 small mutual companies which plan to abandon their facilities and become regular subscribers of the borrower as soon as service is available. These mutuals are located near or adjacent to the present service area of the Grand River Mutual. New construction planned to provide the additional service includes dial central offices at Darlington, Denver, Gentry, New Hampton, Parnell, Powersville, Purdin, Ravenswood and Sheridan, Mo.; and at Blockton and Derby, Ia. A portion of these funds will be used to complete construction in prior loan areas.

REA loans to this borrower will help to provide new and improved service to 16,380 subscribers in Missouri and Iowa. The system, when complete, will consist of 39 exchanges. Twenty-eight exchanges now provide dial service to approximately 11,500 of the subscribers.

•

Horry Telephone Cooperative, Conway, S. C.; $1,887,000; Aug. 15.

Proceeds will aid in providing initial service for 3,527 subscribers. The borrower plans to make two exchanges each out of the present Horry and Murrells Inlet exchange areas. New dial offices will be constructed at Red Hill and Lakewood, the two new exchanges. In addition, the cooperative proposes to enlarge its dial offices at Aynor, Floyds, Loris and Murrells Inlet, and to remodel and enlarge the Conway headquarters-dial office building. The Horry dial facilities are located in the Conway building. Provision is also made for an increase in the proportion of private and semi-private lines.

On completion of the facilities provided for with the assistance of this and prior REA loans, the borrower will be providing new and improved telephone service to 7,011 subscribers. The completed system will consist of seven exchanges. Five of them are now furnishing dial service to approximately 2,550 of the subscribers.

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Fort Bend Telephone Co., Rosenberg, Tex.; $1,161,000; Aug. 16.

These funds will help the company to furnish initial service to 1,142 subscribers and to improve service for 1,711 subscribers. This new borrower now furnishes dial service through exchanges at Katy, Needville and Beasley, and magneto service through its Brookshire and Damon exchanges. This loan will aid the borrower to completely modernize its existing system. New dial central offices will be constructed at Brookshire and Damon and the three existing dial exchanges will be expanded to handle additional subscribers. A portion of this loan will refinance the borrower's indebtedness incurred by partial modernization of the present system.

Francis Butler is both president and manager of the Fort Bend company.

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Ellijay (Ga.) Telephone Co.; $585,000; Aug. 18.

Proceeds will assist in furnishing initial service to 1,132 subscribers. On completion of the system provided for with the help of this and prior REA loans, the borrower will be furnishing new and improved service to 2,273 subscribers. The completed system will consist of dial exchanges at Ellijay and Whitestone which now provide service to approximately 1,100 of the subscribers.

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Boyd County Telephone Corp., Lynch, Neb.; $490,000; Aug. 18.

Proceeds will aid in furnishing initial service to 201 subscribers and in improving service for 341 subscribers. About 299 of those who will get improved service are now served over the magneto and common battery facilities of the following companies which the borrower plans to acquire: Springview Exchange Telephone Co., Johnstown Telephone Co. and five subscriber-owned lines which are switched by the Springview company. The remaining 42 existing subscribers now receive switching service in the expanded area. They plan to abandon their lines and take service with the borrower as soon as it is available.

The Boyd County Corporation plans to construct new dial central offices at Johnstown and Springview. On completion of the system provided for with the assistance of this and a prior REA loan, the borrower will be furnishing new and improved service to 1,048 subscribers in Nebraska and South Dakota. The system will consist of five exchanges, of which three now furnish dial service to approximately 450 subscribers.

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Pierce (Neb.) Telephone Co., Inc.; $459,000; Aug. 18.

Funds will help to improve service for 843 subscribers and to furnish initial service to 198 subscribers. The new borrower of REA funds is a recently incorporated company and has no properties. It plans to acquire the facilities of Pierce Telephone, Inc., which now furnishes magneto and common battery service to the existing subscribers. In order to provide this new and improved service, the borrower proposes to construct a dial central office at Pierce.

William W. Fogle is both president and manager of the Pierce company.

False Values

"The purpose of our public school system, and the sole reason for its existence, is to educate the people, and through this education to prepare them for a richer, both financially and intellectually, life. Somewhere along the long road to education the system has failed. . . . Students today, particularly in the public schools, are ashamed of having intellectual prowess. Much bragging is heard on the star athlete, or the best dancer and social butterflies."—Walterboro (S. C.) *Press & Standard.*

today's

Highlights

of finance-taxes-business trends

by Willard F. Stanley

BOND YIELDS MOVE FURTHER DOWNWARD: Triggered by two favorable developments during the 30-day period ended Aug. 22, bond yields registered a considerable further decline. These developments were lightening of reserve requirements by the Federal Reserve Board and reduction in rediscount rates by that body from 3½ to 3 per cent. This followed previous reduction in rediscount rates from 4 to 3½ per cent.

The latest reduction was by no means unexpected, but statistics of business activity, while not glowing, hardly seemed pessimistic enough to warrant such action at this time. It may not have been entirely free from political undertone in a Presidential election year, but in justification of the action it must be recognized that the rediscount rate is much more closely related to short than to long-term money rates and particularly related to yields on 90-day Treasury bills. The latter had fallen in yield from nearly 3.5 per cent around the turn of the year to less than 2.4 per cent when the Federal Reserve acted on the latest rediscount rate reduction. Viewed from this standpoint, the total 1960 reductions of 1 per cent in rediscount rates merely kept pace with a slightly greater reduction in the yield on 90-day Treasury bills.

Yields on public utility funded debt offerings have now declined in the aggregate somewhere around one half of one per cent a year since the beginning of the current year. A triple "A" rated utility issue was just recently offered, with apparent success, on a 4.55 per cent yield basis (Southwestern Bell Telephone Co. debentures).

Improvement in the bond market in the last 30 days is also amply confirmed by the Wall Street Journal's tabulation of new public utility funded debt issues. For 12 such issues, the tabulation, as of Aug. 18, showed average yield of 16 decimals (0.16 per cent per annum) lower on the basis of then-current bids than average yield based on original offering prices of the securities.

This yield decline followed similar declines of 8 and 6 decimals respectively as shown by the tabulations approximately 30 and 60 days previous to Aug. 18, which adds up to a total decline in yields of 0.30 per cent per annum in about a three-month period.

Despite the recent Federal Reserve moves, the banks still assert that short-term money is relatively "tight." With all the good news "in," for awhile at least,

Mr. Stanley, formerly a utility financial executive, is now president of Corporate Services, Inc. of New York City and is well known as a financial writer. He is a member of the Controllers Institute of America and the New York Society of Security Analysts. He serves on the Finance Management Committee and the Tax Committee of the Controllers Institute (N. Y. Control). His articles are appearing once a month in TELEPHONY.

it seems improbable that there will be any marked further decline in long-term debt yields on utility securities in the near future. Therefore, to the extent that utilities can take advantage of present relatively favorable yields on their new offerings it would seem to be to their advantage to do so.

The Treasury is stated to be seriously considering a substantial offering of new long-term federal obligations on an "advance refunding" basis: i.e., in exchange for federal obligations maturing in the future. Present plans apparently call for exchanging new long-term debt for outstanding obligations originally issued on a long-term basis.

If this program is adhered to, it seems unlikely that such an exchange offer should affect materially and adversely bond yields on utility long-term debt offerings, since long-term debt purchasers would, in such an exchange, merely be substituting one long-term federal obligation for another.

* * * *

RALLY IN STOCK: The 30 days ended Aug. 23 witnessed a substantial rally in stock averages. Such a rally was long overdue from a technical standpoint. It was touched off by the lowering of margin requirements on the stock exchange and was helped to keep going by the recent rediscount rate reduction which, by bringing down bond yields, made stocks relatively more attractive as investments in comparison, on a yield basis.

The rally has proved quite persistent, the New York Times combined 50-stock average rising on seven consecutive trading days through Aug. 17. This was a reversal of a persistent decline in the preceding month, when the average went down for the 11 consecutive trading days ended July 25.

Since July 25, the Times average indicates a rise of about 5 per cent to the close of Aug. 23. The Aug. 23 close represents a decline of about 13 per cent from the 1959 year-end and about 2 per cent from the end of 1958.

The domestic economy still holds fairly well despite a number of "sore" spots. International affairs remain in a muddled state with no indication of prompt solution of the many problems involved. But the tensions appear to be slightly less than in the recent past. Thus the current rally must probably be considered as primarily a "technical" one and, so considered, has probably run the greater part of its course. Uncertainties of the Presidential election year are added, although as a plus sign we have the likelihood that the administration will do everything legitimate to improve business and stock market prices between now and Election Day.

Price-earnings ratio of utility common stocks improved to 17.1 in August compared with 16.6 in December, 1959. With earnings showing a considerable continued improvement in this period it is obvious that most utility stocks have advanced in price since the year-end.

These prices and price-earnings ratio indicate an unusually favorable climate for offerings of new common stock of utilities. It seems wise for utility management to take advantage of this situation to the extent of their equity needs for a year or even more into the future.

* * * *

ABOUT THE NATIONAL ECONOMY: Statistics remain spotty with a number of items definitely on the unfavorable side. For example, building permits showed a 10 per cent decline for July versus June, and a 29 per cent decline compared with July, 1959; this despite easing of money rates; although perhaps it is too soon for this item to be reflected in forthcoming construction.

The squeeze on profit margins also continues in many lines, and current production continues to exceed new orders in the majority of industries. Although gross national product and disposable personal income continue to improve month by month, higher proportionate expense is preventing corporations from gleaning the benefit in most cases. For example, 721 non-financial corporations showed a 4 per cent decline in 1960 earnings versus 1959 for the first half of this year, and a 12 per cent decline for the quarter ended June 30, 1960. A few economists are now predicting a mild recession for late this year or early next.

the Woman's Place

by Dianne P. Drucker
and
Helen Hardin
Associate Editors

THE WOMAN'S PLACE has a guest columnist for this installment. She is Lois Kehoe, formerly executive secretary of the Arkansas Telephone Association and now assistant commercial manager of the Western Arkansas Telephone Co. of Russellville, Ark.

In spotlighting the importance of women employes, many of whom present the "front office image" to subscribers, Lois points out that during the past few years in Arkansas, due to consolidation, more than 30 offices have been established in which women employes are management's representatives for about 70 exchanges. This represents about one-third of the exchanges in Arkansas, Miss Kehoe says.

Aware of the significance of the impressions these women employes make on patrons of member companies, the Arkansas Telephone Association sponsored a school for business office employes which Miss Kehoe attended. She has written the following account of the seminar for the Woman's Place.

"Have you ever applied in person for telephone service in your own company business office, made a complaint, or asked for information about your company's practices and policies?

"In many of our exchanges, nationwide, this is about the only contact our subscribers have with the telephone people, other than the infrequent visits of the repairman.

"During the 'fabulous fifties', the number of Independent telephone companies in Arkansas decreased about 50 per cent. This is alarming, and also heartening—alarming in that we began to wonder if we were losing the all-important 'personal contact' which fosters good public relations—heartening in the sense that by consolidation and mergers we were reaching more potential subscribers and becoming stronger financially.

"Since some of our smaller exchanges have been converted to dial, many of their subscribers are left in the position of having no one at all to talk to about their telephone problems if the exchange is unattended; or must talk to a company representative who may be a complete stranger.

"The Arkansas Telephone Association has long been aware of the importance of our 'front office image'. In a discussion during a board of directors' meeting, we found that most of the Arkansas members felt their front offices were either doing 'okay', or 'I guess they're all right'.

"Our association has recognized that the problems of dial conversions, rural expansions, financing, and other difficulties of a phenomenal telephone business, have been about all we could shoulder; but we also felt that something should be done to preserve our 'front office image'.

"The association therefore sponsored an initial school for business office employes; the first three days of which were completed on Feb. 11, 1960, in Russellville.

"Eleven representatives from six companies participated, and most of us learned once again what it is to be under the thumb of a schoolmarm. Our teacher in this instance was the well-qualified Bill E. Wilson from the staff of Southwestern Bell Telephone Co.'s Independent company relations manager.

"Space will not permit a detailed discussion of all the 'do's' and 'don'ts' we encountered. Suffice it to say that we could be put 'on the carpet' at any time by one of our companions, most of whom were familiar with telephone lingo. We used 'role playing' and 'case method' for 100 per cent student participation.

"Fixed notions harbored by anyone were soon torn apart and thrown out the window. Practical applications produced the results that our teacher was looking for—that dawning light of recognition in a service rep's eye when she feels that she has created a friendly relationship toward her company.

Very few things are important enough to warrant letting the telephone ring and ring. This makes the caller's temper grow short and may lose the call altogether.

"The broad areas of discussion centered around the following topics:

"(1) Company policies.
"(2) Service rep's duties.
"(3) Complete and effective information.

"(1) Company policies vary in many instances, but basically we are concerned with how the policy our company prescribes affects our dealings with subscribers.

"We briefly discussed rates, whether or not our companies were regulated by commissions, collection practices, repair practices, and construction practices.

"(2) The service representative is an integral part of the company. She has a responsibility to the company for her performance and she has an equal responsibility to the subscriber for the service rendered by her company.

"In other words, she has only one thing to sell and that is 'service'. However, in selling this service, she must also gain for her company good public relations, and she can only do this through her attitude toward her job, the subscribers and the people with whom she works.

"In practical application, we were taught:

"(a) The correct way to answer a telephone.

"(b) How to gain a subscriber's confidence by assuring him that we were ready and able to help—to do this we impress upon him that he has reached the correct department and that we will handle his case as promptly as possible.

"(c) How to gain insight into a customer's thinking—one way is to 'listen to what he has to say'.

"We were taught that courtesy is the cardinal rule of a good service representative. In other words, grandmother's advice that 'you catch more flies with sugar than you do with salt' holds true. This applies in any field, but especially to the service representative in a telephone business office.

"One of the things we learned in a practical application of how to handle a telephone conversation with a subscriber, was that when a customer-representative call has been completed, he breaks the connection first—we never do.

No one likes to have the telephone receiver banged in his ear.

No matter how immaterial and irrelevant a question asked a service representative might be, her answer should always be a pleasant one.

"After these demonstrations of how to accept and complete a telephone call, we observed each individual process a case, and as each service representative present completed her case, we criticized. We felt that constructive criticism at this crucial point in our business lives would reveal two things to us:

"(A) We were strong enough in our character to accept the criticism and turn it to our advantage, or

"(B) Our training was inadequate and we were not primarily concerned with whether we were serving our subscriber and discharging our responsibility to our company.

"(3) Complete and effective information is as important to the success of a service representative's job as it is to any other job. Historically, people in a community have for years looked to "Central" and telephone people for information; not only about the public, but community affairs, time-of-day, where is Dr. So-and-So, and where's the fire?

"We have also discovered in the field of communications that you have to be a walking encyclopedia of technical information. This has been no less true since the advent of dial than it was before.

"In keeping subscriber service records, we learned that accuracy is first and foremost. Only through detailed information secured from the subscriber can these records prove of value, not only to the business office, but to the other departments of the company.

"In this connection, we were taught that verification of information passed on to us from our subscribers is responsible for eliminating a high percentage of errors. This is true with respect to the all-important service orders that reach the other departments and equally as important—the directory.

"In dealing with the compiling of a directory, which is certainly where errors are inclined to appear, we were amazed at the hundreds of ways that names can be spelled or words misunderstood.

"Detailed information, carefully written down on paper—not in your memory—is largely responsible for eliminating business office errors. We learned that there are three principal causes of errors in a business office:

"(1) The employe fails to obtain the correct information,
"(2) She fails to give the necessary information, or
"(3) She fails to complete her records accurately.

"All of us who attended the service representative school were appreciative of the problems that each of us faced, and equally appreciative of the knowledge passed on to us by our teacher. The things that we were taught are deeply embedded in our memory and we hope will come forth with unconscious effort whenever the need arises.

"It would be impossible to detail all of them in this article, but we are certainly far better off for the three jam-filled work days that we enjoyed under Mr. Wilson's tutelage.

"Plans for a service representative school in the southern part of the state have not materialized, but the group

(Continued on page 55)

THE Plant Man's Notebook

BY RAY BLAIN, TECHNICAL EDITORIAL DIRECTOR

THE USE OF KEY-TYPE telephones is increasing at a tremendous rate throughout the country. The installation of these sets can be quite a chore if the work is not carefully planned in advance.

Currently, there is a trend being followed by certain larger operating companies to perform a part of the installation work in the shop, rather than on the subscriber's premises.

One company mounts all components of the control equipment on a section of plywood and runs all of the local wiring in the shop. Then, this board is simply mounted on the wall at the point of installation and the line cables connected.

In this connection, another labor-saving method is to connect a short length of cable to the key telephone in the shop. The other end of the cable is connected to a multi-conductor jack. This jack is mounted on the subscriber's desk. A length of cable, equipped with a multi-conductor plug, is later extended to the control equipment.

With this method, only one end of the cable needs to be connected on the job.

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The Pacific Telephone & Telegraph Co. has added a bit of wizardry to the "Magic Kingdom" of Disneyland.

A family-sized telephone booth, 6 feet wide and 7 feet in length, is a thing of beauty, gleaming in silver and brass. These booths accommodate a table and bench, plus a concealed microphone that is used with the latest speakerphone equipment.

Today, two of these sleek booths are among the leading attractions in Bell's Disneyland exhibit. Air-conditioned, with sliding glass paneled doors, blue and orange furniture, speaker recessed in the ceiling, microphone inconspicuous in the wall, both booths look like part of "Tomorrowland."

Now, countless visiting families will be able to tell the folks back home about the wonders and excitement of Disneyland right from the "Magic Kingdom," and everyone can take part in the conversation.

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It came to our attention recently that the operators on a large PBX receive an average of 800 requests daily for other than telephone information.

This arrangement is not only expensive, but is also a detriment to good telephone service. Information, other than a request for someone's telephone number, can generally be handled more economically by the use of recorded announcements.

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The walking telephone installer in the old days, in many cases, carried his tools and materials. His pocket tools usually consisted of a pair of 6-inch pliers, side cutters, long-nose and a screw driver.

The modern installer, who travels in a well equipped truck, usually has a large leather holster which he wears on a belt around his waist. This holster contains an assortment of pliers, screw drivers, wrenches and other small tools. We often wonder how he can locate the particular tool required in this hodge podge.

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Since outdoor summer living has become so popular in this country, the patio telephone is a real necessity. This service can perhaps best be provided by the installation of an outdoor type weatherproof jack. With this arrangement, a telephone can be plugged in when required, and removed during inclement weather.

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Down in Texas recently, we heard a new telephone story that was supposed to be true. It seems that an ox was used to pull wire on a toll line construction job. Four wire reels were set up on a wagon and the ox pulled them out along the pole line.

This arrangement worked fine, except for the fact that about the middle of each afternoon, the ox got tired and lay down, and no amount of persuasion could induce him to do any more work.

One old lineman assured the foreman that he could start the ox, if he would permit him to do it in his own way. The foreman gave his consent, and the lineman attached clips from a magneto test set to each of the ox's ears. A swift turn of the generator and the ox not only got up, but he moved out in high gear. Before they got him stopped, four coils of wire were well tangled over the countryside.

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Numbering plan information centers are now in service in Baltimore, New York, and Wilmington, Del. In time, this service will be in operation throughout the Bell System. Los Angeles will be the first West Coast city arranged to serve as a centralized center for customers dialing in the 213 numbering plan area.

The plan operates in this manner: A New York customer desiring to call a party in Los Angeles, but not having the telephone number, will dial 213-555-1212. This connects him to the Los Angeles Information Bureau which will furnish the desired number.

Operators are presently being instructed to advise customers of the new service; however, they will continue to handle the information call if the customer insists.

It is expected that by April, 1961, all numbering plan areas will have the centralized information service available for the use of customers. Boston, Milwaukee, Minneapolis and Newark will have the service available this year.

The new centralized information serv-

ice has proved desirable for two very good reasons: It improves the service to the customer, and it saves the operator's time.

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Business organizations that maintain widely separated establishments may now send information in machine language to a central processing point over an ordinary telephone line with the aid of an IBM 1001 data transmission system. This machine, used in conjunction with the telephone company service, transmits both fixed data from prepunched cards, and variable data manually entered on a keyboard.

The central processing point receives the data in the form of punch cards which can be fed directly into an IBM data processing system for automatic handling.

Each transmitting station in a 1001 system includes a simple card reader and combined keyboard unit 18 inches in its largest dimension. Five of the 15 keys on the keyboard permit the operator at the transmitting station to control remotely a card punch at the central location. The operator establishes a direct connection with the card punch by conventionally dialing on a modified telephone instrument, then feeds master cards into the card carriage of the 1001 terminal.

When the operator dials the number of the output punch, it is said to "answer" automatically and establish the connection without attention at the receiving end.

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The Bell System owns and operates nearly 39,000 motor vehicles—more than any other business.

Every working day, most of these vehicles are on the move. It is estimated that these vehicles will travel about 800 million miles in 1960.

The safety record of the Bell fleet is one of the best. Last year, the Bell fleet had 1.12 accidents per 100,000 miles driven. This included minor accidents such as small fender dents. The record represents a 24 per cent improvement in the last four years, and further improvement in the future is expected.

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Crosstalk: A Sunday driver is defined as one who doesn't drive any better during the week.

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Rules are provided for use when brains run out.

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It is claimed that many a man who thinks he's a dynamo is actually only an electric fan.

Plant Man's QUIZ

By RAY BLAIN, Technical Editorial Director

Q. Will it be possible to obtain a long time tape recorder that can be used to monitor a manual switchboard?

A. Yes, a magnetic tape recorder now available provides 24 hours of reliable, non-stop recording. The tape travels only 2½ inches per minute, permitting 24 hours of recording on a single 300-foot reel. A frequency response of between 200 and 3,500 cps assures quality recording within the voice range.

Optional equipment with this recorder is a voice-actuated relay. This feature provides a trustworthy means of conserving tape. The spoken word starts the recording process, which terminates with the termination of the recordable sound.

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Q. What is meant by a non-patent-type anchor?

A. This term usually refers to log or plank anchors. Sometimes, locally fabricated concrete anchors can also be classed in this category.

As a rule, the use of non-patent-type anchors cannot be justified except in a few cases where unusual soil conditions are encountered.

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Q. Is the nylon safety strap considered a satisfactory replacement for leather?

A. People who have used the nylon safety strap advise us that it has proved entirely satisfactory. One type is constructed of many plies of nylon impregnated with neoprene. It is claimed that this type is pliable, flexible and actually stronger than leather.

The tensile strength is 15,000 pounds per-square-inch and it will withstand 3,850 pounds before ripping. Strength is not affected by pole dressing or cleaning agents. The strap remains flexible and easy to handle in hot or cold weather.

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Q. What is the heat coil type fuse and what are its advantages?

A. This is a combination of the grasshopper type fuse and the heat coil. It provides an arc-free fuse with accurate operating time. When subjected to more than the rated current, the ratchet which is permitted to revolve, releases the ground and alarm spring. After the trouble has been cleared, and the current flow is reduced to normal, the fuse can be reset manually by the ratchet which is again locked into position.

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Q. What special features should be provided on a fire reporting switchboard?

A. These switchboards are usually associated with a lamp-type annunciator cabinet. The lamp on the annunciator lights with the line lamp on the switchboard. The annunciator lamp remains lit after the line lamp on the switchboard is plugged out and must be released manually. This feature is provided so that a reporting line is not lost if an operator becomes confused when two or more alarms are received simultaneously.

A red lamp is associated with each line lamp on the switchboard. A relay across the line is held in an operated condition by a current flowing over the line and through an adjustable resistor connected across the line at the fire reporting telephone. This bridge across the telephone must be of high enough resistance so that it will not operate the line relay. If the line is grounded on the battery side, or goes open, the relay will release and light the red lamp, thus indicating that the line is in trouble. This feature is referred to as a supervised line.

•

Q. When two or more aerial cables are installed on one pole line, should the suspension strands be bonded together?

A. All cables should be bonded together at each four to eight spans. If the cables are supported by a single suspension bolt, it will serve as a necessary bond.

Courts and Commissions

SW States Company Asks $239,000 Raise in Oklahoma

An application for a general increase in telephone rates has been filed with the Oklahoma Corporation Commission by The Southwestern States Telephone Co., Brownwood, Tex., it was reported on Aug. 25.

The company, which serves 32 Oklahoma cities and towns, is seeking an increase in annual revenue of $239,000.

The increase in rates is needed because of increased costs of material, equipment, and labor, the application states. Net earnings for the year ending June 30, 1960 were $274,500, or a 4.98 per cent return on a plant investment of $5,516,000.

According to the application, increased rates will result in net earnings of $386,800, or a 7.90 per cent return on the company's investment in Oklahoma.

The company pointed out that during the past two years it has made "vast and material improvements in and expansion of its telephone facilities" in Oklahoma at high price levels. Wage increases have been granted which also raised operating expenses.

Southwestern States is spending $694,070 to provide for service and plant improvements in 1960, the application states, and will spend a like or greater amount in 1961-62. In order to "make and justify such improvements and expenses, an adequate rate of return on investment is necessary," the company explained.

Authorize Two Rate Raises; Approve Sale in Wisconsin

The Wisconsin Public Service Commission on Aug. 23 took the following actions:

The Ogema Telephone Co. was granted a $12,900 rate increase (TELEPHONY, June 11).

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The Norwalk Independent Telephone Co. received approval for a $1,687 rate raise.

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The Sylvan-Soldiers Grove Farmers Mutual Telephone Co., Sylvan, was allowed to sell to the Richland-Grant Telephone Cooperative, Blue River (TELEPHONY, Aug. 29, 1959).

Approve $10,000 Increase For New York Company

The New York Public Service Commission has accepted a tariff amendment filed by the Cato & Meridian Telephone Co., Cato, designed to produce $10,000 in additional annual revenue.

In filing its new rates, which become effective Sept. 1, the company said its operating expenses for the next 12 months will exceed those of 1958 by more than $38,000.

The company serves about 2,900 stations through dial offices at Cato, Hannibal, Fair Haven and Lysander. Toll-free service is provided between Cato, Hannibal and Fair Haven. In addition, subscribers of the Lysander exchange have toll-free service to both the Baldwinsville exchange of New York Telephone Co. (Bell) and the Fulton exchange of Oswego County Telephone Corp.

New rates are as follows:

One-party business	$7.00
Two-party business	6.00
Multi-party business	5.00
One-party residence	4.75
Two-party residence	4.25
Multi-party residence	3.25

Ask to Sell 7 Exchanges; Seek Note Approval in Mo.

The Midwestern Telephone Co., Wright City, on Aug. 24 filed an application with the Missouri Public Service Commission for permission to sell its Augusta, Defiance, Truxton, Marthasville, Warrenton, Wright City and Jonesburg exchanges to the South Missouri Telephone Co., Steelville.

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Also in Missouri, the commission on Sept. 16 was to have heard the petition of the Chariton Valley Telephone Co., Bucklin, for approval of mortgage notes and financing covering expenditures for expansion.

General of Wis. Allowed One Million-Plus Raise

The Wisconsin Public Service Commission on Aug. 16 approved rate increases totaling $1,022,502 for General Telephone Co. of Wisconsin (TELEPHONY, May 2, 1959). The company had requested $2,524,052.

The rates set by the commission are designed to produce a 5.94 per cent return on General of Wisconsin's investment. The company serves approximately 164,000 subscribers and operates 181 exchanges.

The commission disallowed certain company expenses, including an outlay for national advertising.

Also, the commission abandoned its practice of setting individual rates for each of the company's exchanges. Instead it adopted a sliding scale of standard rates for 151 exchanges, retaining individual rates for the other 30.

The sliding scale takes into consideration the size of the exchange and its type of service—magneto, common battery or dial. The new rates will result in a "wide range" of increases and decreases, the commission noted.

Grant Raise For EAS Service in Arkansas

The Arkansas Public Service Commission on Aug. 18 gave permission to the Tri-County Telephone Co., Everton, to raise rates to cover the provision of extended area service.

The Tri-County company plans EAS between its Everton, Valley Springs and Western Grove exchanges to the Harrison exchange of the Boone County Telephone Co.

Old rates and new rates for EAS are as follows:

	Old	*New*
One-party business	$6.50	$7.00
Eight-party business	5.00	5.50
One-party residence	4.25	4.75
Two-party residence	3.25	3.75
Eight-party residence	3.50	4.00

Asks to Serve in Missouri

The Missouri Public Service Commission has set a Sept. 14 hearing date

(Continued on page 36)

STROWGER DIAL EQUIPMENT SERVES EXCHANGES OF ALL SIZES

From small unattended exchanges to large multi-office networks, Strowger's faithful performance is proven year after year. Shown here are just a few of the many independent exchanges served by Strowger Automatic.

Whether you serve a village or a city, Strowger is your best bet for the future. The simple design of this dial equipment keeps adjustments and repairs to a minimum. Strowger is easy to finance. And if your area is growing, it's simple to expand the capacity of Strowger equipment.

Are you planning a dial conversion? If so, get in touch with us. We've helped hundreds of telephone companies—*of all sizes*—to solve their dial conversion problems. We'd like to do the same for you. Just write Automatic Electric Sales Corporation, Northlake, Illinois.

STROWGER DIAL EXCHANGES WITH LESS THAN 500 LINES

Chicora, Pennsylvania
Metamora, Illinois
Haskins-Tontogany, Ohio
Hamilton, Washington
Lena, Wisconsin
Wisner, Nebraska

STROWGER DIAL EXCHANGES WITH 500 TO 1,000 LINES

Tunkhannock, Pennsylvania
Johnsonburg, Pennsylvania
Knoxville, Illinois
Wakeeney, Kansas
Big Bear Lake, California
Breaux Bridge, Louisiana

STROWGER DIAL EXCHANGES WITH 1,000 TO 1,500 LINES

Hastings, Minnesota
Clintonville, Wisconsin
Tipp City, Ohio
Osceola, Iowa
Denison, Iowa
Caro, Michigan

STROWGER DIAL EXCHANGES WITH 1,500 TO 2,500 LINES

Lebanon, Oregon
Naples, Florida
Electra, Texas
Butler, Missouri
Thomasville, North Carolina
Brazil, Indiana

STROWGER DIAL EXCHANGES WITH 2,500 TO 5,000 LINES

Lexington, North Carolina
Kalispell, Montana
Beatrice, Nebraska
Fulton, New York
Mount Airy, North Carolina
Troy, Ohio

STROWGER DIAL EXCHANGES WITH 5,000 TO 10,000 LINES

Newark, Ohio
Mankato, Minnesota
Irving, Texas
Butler, Pennsylvania
Johnson City, Tennessee
Middletown, New York

STROWGER DIAL EXCHANGES WITH OVER 10,000 LINES

Park Ridge, Illinois
Bristol, Tennessee
Lincoln, Nebraska
Jamestown, New York
High Point, North Carolina
Lima, Ohio

AUTOMATIC ELECTRIC

Subsidiary of

GENERAL TELEPHONE & ELECTRONICS

GENERAL SYSTEM

on the application of the Eastern Missouri Telephone Co., Bowling Green, to serve Middletown. Middletown is presently served by the Middletown Telephone Co.

Bell of Pennsylvania Solves Outdoor Booth Problem

The Bell Telephone Co. of Pennsylvania recently took steps to remove a source of irritation for its customers —the time-lag between installation of outdoor telephone booths and the actual placing of telephones in them, a period reported to be about two weeks. During that time, would-be callers kept visiting the booths only to find that telephones were not in operation.

Working with the Avery Label Co., Monrovia, Cal., the Bell of Pennsylvania solved its problem with a transparent 10-inch-square pressure-sensitive label.

Placed on the inside of the glass door, this prominent yellow-and-black label could be spotted from a considerable distance, sparing motorists and pedestrians the nuisance of discovering for themselves that an outdoor booth was not in operation. Then, when the hookup had been completed, the service man easily removed the self-adhesive label.

The message on the label read: "More Service! This Telephone Is Being Connected For Your Convenience. It Will Be In Service Shortly."

Bell of Pennsylvania thus transformed a liability into an advantage, a petty annoyance into customer goodwill.

Wis. Contractor's Employe Electrocuted on Line Job

An employe of a contracting firm was electrocuted on Aug. 23 near Morrisonville, Wis., while attaching a telephone line to power poles for the North-West Telephone Co., Tomah. Two other workmen were injured.

The deceased was Charles L. Thomas, 25, of Arlington, Wis. Two co-workers, Steve Carter of Arlington and Stephen Anderson of Token Creek, Wis., were hospitalized with burns.

Coroner Michael Malloy said that Mr. Thomas apparently received a more severe shock than Carter and Anderson because he was grounded by metal climbing spikes on his boots.

History Lives

"In the life of a nation, ideas are not the only things of value. Sentiment also is of great value; and the way to foster sentiment in a people, and to develop it in the young, is to have a well-recorded past, and to be familiar with it."—JOSEPH ANDERSON.

Do-It-Yourself

C.O. Print Table

By D. G. PLASKETT

ANY HANDYMAN can put together the central office print table illustrated in the accompanying photo with very little time or effort. The table top measures 72 inches by 36 inches and was cut from a piece of ¾ inch plywood. A flat piece of ¾ inch moulding was nailed along the bottom edge to prevent pencils and papers from sliding off the sloped tabletop. The woodwork can be enameled in a color that matches office equipment.

The legs were made from two 10-foot lengths of 1-inch, aluminum electrical conduit, such as is used for electrical wiring on equipment bays. A piece 9 foot, 4 inches long was bent in an inverted shape to provide two 39-inch front legs. The center length was drilled to permit the conduit to be bolted to the table top with flat headed bolts *(Fig. 1)*.

The rear legs are bent and attached in the same manner using the full 10-foot length of conduit to provide two 43-inch legs. The longer rear legs

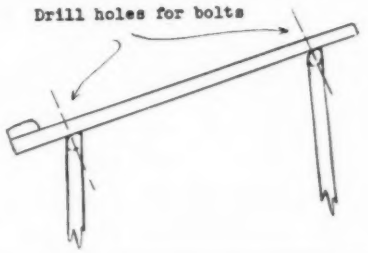
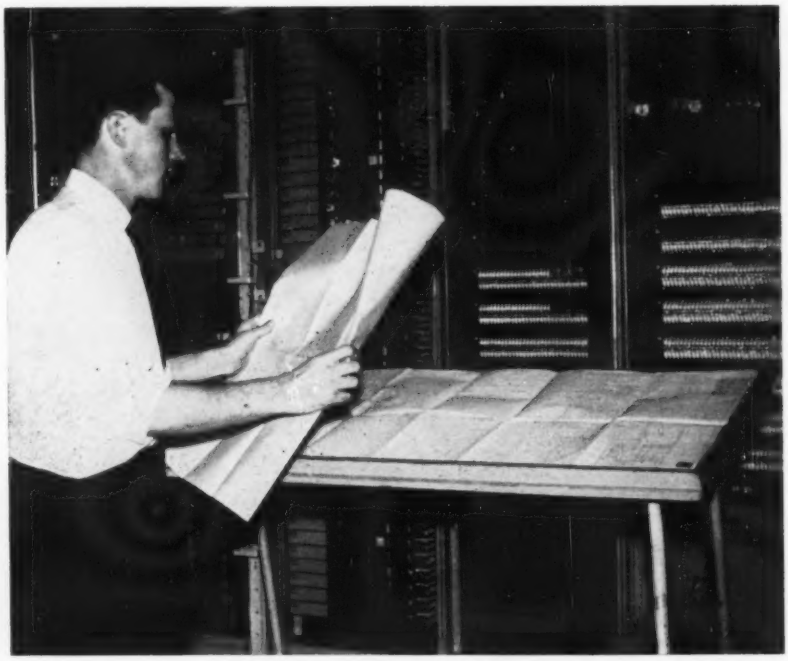


Fig. 1. End view of print table showing aluminum conduit legs bolted to plywood table top. Moulding along lower edge prevents pencils and prints from slipping off the table.



Portable central office print table.

produce the sloping tabletop. A pipe bender should be used to bend the conduit, or the conduit should be filled with sand before hand bending.

An alternative method that is necessary if the table must be portable, is to use separate threaded legs that screw into pipe flanges mounted on the underside of the tabletop. When the table has to be packed and moved to another location, the legs can be removed. Unfortunately this latter method permits the table to sway a little.

Plastic chair leg tips can be purchased at a hardware store and fitted on the ends of the legs to finish the job.

Book Review

"National Electrical Code Handbook: Based on the 1959 Edition of The National Electrical Code," revised by Frank Stetka; 10th edition, 679 pages; 5¾ inches x 8 inches, 387 illustrations, 53 tables; $8.50.

Facts on how to handle all types of electrical wiring and installation jobs in strict accordance with the latest National Electrical Code are presented in this newly-published edition of a well-known handbook. It explains rules and measurements for electrical jobs —what they mean—and how to apply them.

The book follows exactly the same numbering system as presented in the code, providing easy reference to any rule. Next to the rule, in a contrasting typeface for ease of reference, is found its meaning, intent, and interpretation where applicable.

This edition was prepared under the supervision of the National Fire Protection Association, the organization that revises the National Electrical Code. Mr. Stetka is the electrical field engineer for this association, and is said to be well qualified to carry on the work developed by Arthur Abbott.

Important new features in the 10th edition include reorganization in line with the rearrangement and renumbering of the National Electrical Code, and numerous important changes in basic requirements. The Handbook also gives modern examples of how to calculate electrical load, number of branch circuits, and size of feeders.

The author is secretary of the NFPA correlating committee, and code consultant to the International Association of Electrical Inspectors.

Mr. Stetka has had previous experience as a master electrician, supervisory electrical engineer for the federal government's General Services Administration, and chief electrical inspector for the District of Columbia.

This book can be ordered from TELEPHONY.

USITA Announces Two More Speakers for Convention

TWO NATIONALLY-KNOWN speakers have accepted invitations to address the annual convention of the United States Independent Telephone Association to be held Oct. 9, 10, 11 and 12 in Chicago, according to Clyde S. Bailey, USITA executive vice president.

DR. A. D. HOLT

Dr. A. D. Holt, president of the University of Tennessee, renowned educator and author, will give the traditional inspirational closing address as the wind-up speaker of the convention.

Dr. Holt, whose topic will be "How To Be A Cobalt Bomb," has devoted a lifetime to education, having run the gamut from a high school athletic coach to his present position as president of one of the country's great universities.

J. L. POWELL

He is a former President of the National Education Association and is a life member of the National Congress of Parents and Teachers.

Dr. Holt is the author of a book, "Struggle For A State System of Public Schools in Tennessee" and has contributed numerous articles to various educational publications.

J. Lewis Powell of Washington, D. C., a mechanical and aeronautical engineer, and an internationally famous lecturer, humorist, and author also will address the convention on the subject, "Cave Man To Space Man."

Mr. Powell has worked both in private industry and in government. He is a recognized authority in the field of industrial logistics. In 1957, he received the Industrial "Oscar" of the Strategic Industries Association for outstanding services to industry-defense teamwork.

Mr. Powell is a dynamic and forceful speaker who uses shirt-sleeve English in his crusade for balanced progress. He is known nationally and internationally for his various talks on the "Collapse of Time" theme. These talks deal with various aspects of mankind's stumbling progress from muscles to missiles.

Mr. Powell's talks, well spiked with warm humor and sound philosophy, have been the subject of numerous magazine articles, editorials, columns and other published comment. They have even inspired sermons and floor shows. Mr. Powell's talk is a must for all Americans who cherish their liberty and freedom. He presents a powerful and striking message.

USITA Executive Vice President Bailey, who lost no time in signing up Mr. Powell after hearing him speak recently in Washington, strongly recommends "that all those attending the convention hear Mr. Powell at the first general session on Oct. 10. Mr. Powell's address will be a different kind of talk, delivered in a different style. During the past few years at meetings from coast to coast people have been intrigued, stimulated, even provoked, but always entertained by this unusual discussion on the phenomena of progress in our time."

As announced in the Aug. 27 issue of TELEPHONY, another featured speaker at the USITA convention will be Don G. Mitchell of New York City, president of General Telephone & Electronics Corp., and chairman of its subsidiary, Sylvania Electric Products, Inc.

Hawaiian Company Installs Its 200,000th Telephone

Hawaiian Telephone Co. now serves more than 200,000 telephones in the state of Hawaii.

The company installed its 200,000th telephone on July 29, marking the rapid growth of the telephone industry in Hawaii since World War II.

It took Hawaiian Telephone 59 years (1883-1942) to install its 50,000th telephone. The company installed its 100,000th telephone eight and one-half years later in 1950, and its 150,000th six years later in 1956.

Speaking at the installation, J. Ballard Atherton, president and general manager of the company, said: "This installation is symbolic of the rapid economic growth in the islands and the rising standard of living of its residents."

Mr. Atherton stated that Hawaii today has 32 telephones per 100 population. The United States as a whole has 37.97 per 100, more than any country in the world.

The Hawaiian Telephone Co. provides service to more than 135,000 subscribers on six islands. The number of telephones per island is: Oahu (on which the capital city of Honolulu is located), 164,250; Hawaii, 16,150; Maui, 10,300; Kauai, 7,750; Molokai, 1,050, and Lanai, 500.

J. Ballard Atherton, president and general manager of the Hawaiian Telephone Co., presents the company's 200,000th telephone to Mr. and Mrs. Richard Imahiro.

Mr. Atherton said the company's 1959 construction program totaled more than 10.2 million dollars—which means it spent about $39,000 each working day for improvements and expansion. This year, capital expenditures will total 14.7 million dollars.

Mr. Atherton also pointed out that the company is the only Hawaiian corporation owned by more than 10,000 common stockholders. The company employs almost 2,000 men and women and its total payroll for 1959 amounted to $9,545,260, up 12.8 per cent from 1958.

The 200,000th installation was made by the company's top plant salesman, station installer, Taylor Kai at the home of Mr. and Mrs. Richard Imahiro of Pearl City.

Bolivia Creates Ministry, Reorganizes Communications

The Communication Industries Division of the Business & Defense Services Administration (BDSA) reports that the government of Bolivia has created a commission responsible for reorganization, expansion, and modernization of postal, telegraphic, and radio communications.

The Bolivian commission will be concerned with technical, legal, administrative, fiscal, statistical, and personnel screening.

Bolivia will make a study of needs to guide the national communications system and establish public requirements. Technical and executive personnel will be required to effect the plans.

BDSA reports that practices in conformity with international regulations governing postal services and communications will be adopted.

An essential part of this over-all plan is the creation of a separate Ministry for Communications, "in order to permit high-level direction of the complex problems encountered in the postal and telecommunication services."

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LEAD CASE ASSEMBLIES
FOR AERIAL (STRAND) MOUNTING
CONTAINING FOUR TO SEVENTY-SIX COILS

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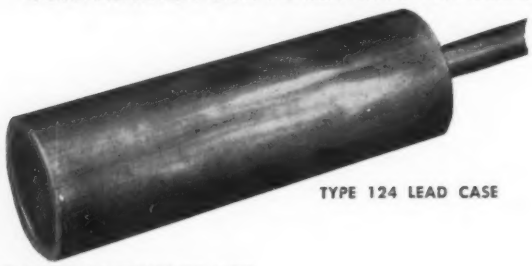


TYPE 124 LEAD CASE

- *LEAD STUB ASSEMBLIES* ARE PRESSURIZED
- *PLASTIC STUB ASSEMBLIES* ARE SEALED IN THERMOPLASTIC COMPOUND TO INSURE PROTECTION FROM MOISTURE.

These assemblies can be equipped with voice frequency coils, Types C632 (88 MH) and C638 (44 MH) coils are for subscriber loading. Types C642 (88 MH) and 641 (44 MH) coils are available for use on quadded interoffice and toll cables. (Also available with MF10 and MF11 units.) Special Coils can be made to meet other requirements.

Write us for assistance on your loading problems.

CEECO loading coils are sold by your telephone equipment supplier.

COMMUNICATION EQUIPMENT & ENGINEERING CO.

5646 West Race Avenue • Phone EStebrook 8-3109 • Chicago 44, Illinois

LONG-SPAN PLANT

Concluded from page 23

curred at deadends on .080 and .095 wire. The dampers were then changed to a larger and heavier polyethylene tube, some of which were nearly 4 feet long. This arrangement reduced, but did not entirely eliminate, the fatigue failures at deadends. The deadends were then all replaced on the theory that they had been damaged when used with the 18-inch vibration dampers. This action apparently corrected the defect as no fatigue failures have been experienced at deadends since August, 1959.

Service over the conventional type open wire toll line serving Tyler, Minn., was knocked out of service by the big storm of last winter. One circuit on this line was restored temporarily in four days. Service on the entire lead, however, was not restored until about 10 days later.

The National-Standard Co. of Niles, Mich., cooperated with REA engineers in developing sag and tension tables covering Copperply wire used on this pilot long-span installation.

This new concept of long-span construction prevents mid-span hits, provides uninterrupted service, eliminates leaks to ground and reduces corrosion as on bare wire. Tree trimming is minimized and can be programmed into routine practices. Maintenance costs in general are appreciably reduced.

In summation, the conventional open wire concept actually fights nature. By this we mean that an all-out effort is usually made to build a line that will not be torn down by the storm elements. We are all too familiar with the fact that nature is frequently the winner of this battle.

The new concept of long-span insulated wire plant differs from the old in that it cooperates with nature. Comes the storm with sleet and snow, the insulated wires of the long-span stretch and lie on the ground so that the poles, insulators, crossarms and guys are relieved of the extra loading and are not damaged. Neither is the service interrupted as happens when poles break, anchors pull out, and bare wire breaks and tangles.

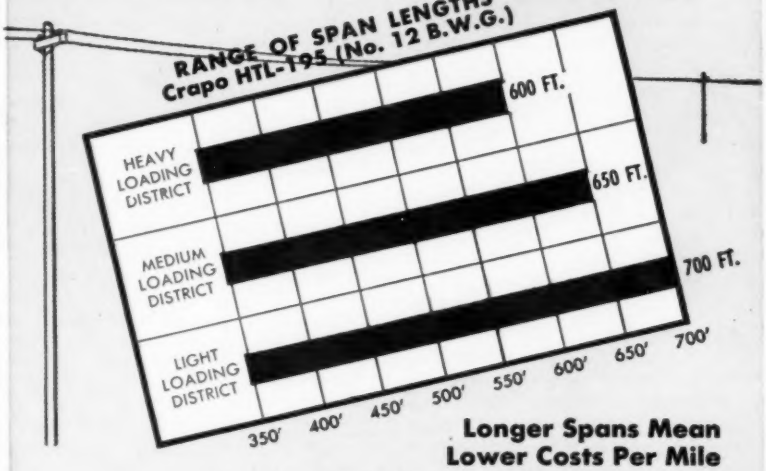
During the severe storms in Minnesota of last winter, rural subscribers frequently called the Tyler Telephone Co. and reported their line down. They were asked if they were calling from their own telephone. They would admit that they were, but insisted that the line was down and should be repaired. One could not blame these subscribers for being confused by this unorthodox condition.

Crapo

HTL-195

FOR EXTRA LONG SPAN RURAL LINES

The *NEW LOWER* Resistance Extra-High Tensile Line Wire

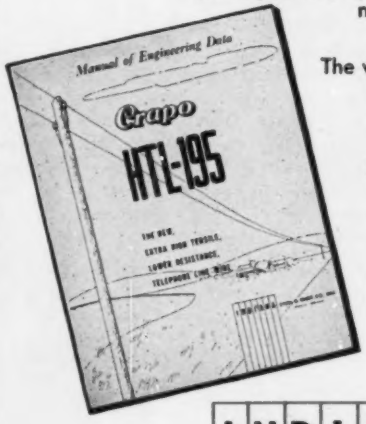


Longer Spans Mean Lower Costs Per Mile

You can cut the number of pole structures to a minimum when you use *Crapo* HTL-195 in building rural telephone lines. Extra long span construction, made possible by the high physical strength of this new wire, means marked savings in material and installation costs.

The voice transmission quality of *Crapo* HTL-195 is equal to that of *Crapo* HTL-135 and superior to older grades of ferrous wire.

Pertinent technical data have been prepared to assist engineers in designing and building extra long span lines with *Crapo* HTL-195.



WRITE TODAY for FREE COPY of the CRAPO HTL-195 "Manual of Engineering Data" No. A-195

INDIANA STEEL & WIRE COMPANY, INC.
MUNCIE, INDIANA

THE Operator's Corner

By MAYME WORKMAN — TRAFFIC EDITOR

"WILL THE working girl be automated right out of her job?" This is a thought which may come to the minds of our switchboard operators as telephone equipment becomes more mechanized from year to year. The field of communications is probably the most automated industry in America today.

An interesting article on the subject of automation, by Stanley Englehart, appeared in *Today's Secretary* recently. The following excerpts, which are applicable to the telephone industry, have been taken from it.

The writer stated: "The familiar dial telephone is actually a compact computer with the ability to remember and use logic. A few twirls of your finger and automatic controls connect you with someone across town or, through DDD (Direct Distance Dialing), across the country.

"Yet despite the tremendous—even fantastic communication advances since 1899, the most automated telephone system in the world still needs 200,000 operators. Why?

"As one telephone official put it: 'The girl who sits at the switchboard provides, in one convenient package, memory, logic, and swift switching action—to the limit of her reach. The history of the telephone is built around women—and there's not a computer made that can replace the girl at the board or the hundreds of thousands of girls who fill in at desks behind her.'

"So it is today—and so it was during the last century. From the very beginning the communications industry found women to be an indispensable cog in the machine. In fact, late 19th century telephone operators were among the few women workers who could boast of a (proper) job and a regular weekly pay check.

"'There weren't many places a woman could work in those days and keep her name unsullied,' a retired operator recalls. 'We came to work in skirts that were long and full. High top shoes modestly covered the ankles, although we did manage to attract some attention through red or green laces with gold-colored tips.

"'We wore two petticoats and never went without a hat. In winter every respectable girl wore long woolen underwear. Once a month we received the handsome wage of $18.'

"Nevertheless, it was an era of emancipation for women. In every corner of the nation the exploits of pioneer women helped to open the creaking doors of business to the oncoming hordes of women workers. The big awakening was on!

"It's more than just a coincidence that women played a major role in the growth of the communications industry; for in this industry, mental agility and physical dexterity are vitally needed elements. Today, more than ever, the electronic machines used for dispatching messages need the swift, sure touch of feminine fingers.

"Telephone switching in the early 1900's was largely a physical chore performed by operators at huge battery-powered boards. Today, with Americans making calls at a rate of 160 million a day (plus 6 million more long distance calls), intricate switching mechanisms are used to handle the tedious part of the work—leaving the operators free to concentrate on more mental tasks."

To best grasp the nation's immense dependence on modern communications is to imagine a typical day *without* the telephone. It would be like that old cliche: "The silence was deafening." Contacts would be limited to the mail and to people coming into the office.

People did get along without the telephone before it was invented, but things have changed since that era. We're geared for a different type of life—and the so-called modern conveniences, such as cars, planes, television, and telephone are essential to our existence.

As far as telephone service is concerned, people are looking forward to more new things. In the home, such things as special colors are making the telephone part of the decorating scheme. Today the efficient housewife wants a compact wall telephone in her kitchen, another in the family room, and a regular telephone—in color—in the bedroom.

There are many more innovations in telephony that make our lives easier and more pleasant. For example, there's the Speakerphone that you don't have to hold to use. You push a button and your hands are free.

There is service to take your calls when you are out and accept a short recorded message. Then, there's the telephone for use in dark places. The dial lights up when you lift the telephone to place a call. The bell on the modern telephone can be turned to loud, soft, or medium. There are all sorts of lights, bongs, buzzers and bells for special situations.

"Unbelievable," the telephone user of only a decade ago might say. Yet all this equipment is in daily use and many more "unbelievable" items are on the drawing boards, or in production. It has been stated that some day a good many people will carry their telephones with them in jackets or handbags. Compact wireless transistor sets are already being tested in certain cities.

Women of today carry everything in their handbags, from a compact to a piece of string, so they will have no difficulty in finding space for a telephone.

Progress has brought many changes in telephony and the mode of dress of the telephone operator has kept pace with progress, but there is one thing that has not changed—the pleasing personality reflected in the operator's voice, her efficient service and her spirit of helpfulness. As long as operators serve in the telephone industry, which will

The townspeople of Urich, Mo., and neighboring communities, gathered 500 strong for an appreciation day held recently for the Misses Daisy and Edith Jefferson, operators at the United Telephone Co. of Missouri's Urich exchange. The ceremonies marked the conversion of the Urich exchange and the retirement of the two sisters. Miss Daisy has been employed as operator at Urich for 31 years; and her sister, Edith, although not a direct employe of the company, has assisted her for 21 years. The large audience is all the more noteworthy, since Urich is a community of 400 inhabitants. In the above photo some participants in the festivities are shown at the head table. They are, front row, left to right: W. J. Brown, master of ceremonies; Rev. H. W. Allee, who gave the prayer; Mrs. D. A. Miller, who participated in a "This is Your Life" sketch honoring the sisters; Miss Edith Jefferson; Mrs. Bettie Sriver and Mrs. Georgia Hayden, who also took part in the sketch; Miss Daisy Jefferson and Miss Teresa Hillebrand and Mrs. Tom Jefferson, both of whom appeared in the sketch. Back row, left to right, are: F. N. Erwin, who presented a plaque to the ladies on behalf of Urich businessmen; J. G. Kramer, Kansas City, president of United Telephone Companies of Kansas, Missouri and Arkansas; Kenneth Mansfield, trouble shooter; George Montgomery, warehouse foreman; Sam McCalmon, wire chief; Russell Clubb, equipment installer and W. F. Throckmorton, retired equipment installer, all of Clinton; Elvin Durr of Kansas City, equipment and building supervisor; Mrs. Burris Carter, who appeared on the program; Robert Hunt of Butler, district manager; Larry Graham, also on the program; R. L. Smith of Clinton, district manager and Louis Sallaz of Clinton, state maintenance and construction supervisor. Right photo: The sisters inspect new dial system. (Clinton eye-photos by Pinkston.)

probably be for quite some time, the traditional "spirit of service" will prevail.

Traffic Questions

(1) When a customer at a non-coin telephone requests cancellation of a call on which a report charge applies, what does the operator say?

(2) If a customer asks for Operator 9, what should the operator say?

(3) When an operator after proceeding with a call on which the customer has asked for Operator 9, encounters another delay and the customer cancels the call again, what action is taken by the operator?

(4) How does the operator proceed if the customer requests that a subsequent attempt be made when another delay is encountered on a call which the operator has acknowledged with "This is Operator 9."?

(5) When a ticket given to the "report charge" position has "AG" in the "spec. inst." space and "9" in the upper right hand corner; and the ticket entries indicate that another delay has been encountered and the calling party has again cancelled his call, how does the operator at the "report charge" position proceed?

Answers to questions are on page 52

Pa. Woman Executive Featured in News Story

The Lancaster (Pa.) *New Era* recently featured an article on a woman telephone executive, Mrs. Bertha Brossman Eaby, president and chairman of the board of the Denver & Ephrata Telephone Co., Ephrata.

The story chronicled Mrs. Eaby's 48-year telephone career with the company, which was founded by her father, the late William F. Brossman.

When Mrs. Eaby began with the company it had 100 telephones in service. Today it has 18,875.

Mrs. Eaby started her working career as a school teacher but was persuaded by her father in 1912 to come to work for the D&E company.

She remained in the telephone business, marrying Christian C. Eaby, a co-worker who served as president of the company from 1944 until his death in 1956. Mrs. Eaby succeeded him as president and was elected chairman of the board in 1960.

Nigeria Government Has 10-Year Communication Plan

The government of Nigeria, Africa, has announced it has set aside 10 million pounds for the improvement of telecommunications and postal facilities in Port Harcourt. The money is to be spent over a period of 10 years.

Federal Minister of Communications & Aviation, Olu Akinfosile, indicated that the importance of communications is being recognized in the plans in the Port Harcourt industrial center.

Break It Gently

"One parent we know thinks it only fair to apply a withholding tax to the youngster's allowance just so the younger generation can get gradually accustomed to a procedure to which adults are now hardened."—Priest River (Idaho) *Times.*

News on New Products

TWO-PURPOSE MOBILE TELEPHONE — A mobile radio-telephone, which also may be used as a two-way mobile radio, is announced by the Industrial Products Division of International Telephone & Telegraph Corp. Simple plug-in connections permit this unit, known as the MT600 Autocom, to be used for either kind of operation.

The MT600 may be used with future radio-telephone systems employing two-way dialing duplex operation and more than two RF channels. When used as a mobile radio, according to ITT, it is compatible with all existing systems and is designed for split-channel operation to comply with FCC requirements.

The single-conversion receiver, with sealed crystal filter and crystal discriminator, is said to simplify maintenance, and insure longer service and economy.

Equipment of the MT600 comprises four main sections: power supply, transmitter, receiver and selector.

It is approximately 16 inches deep, 9 inches wide and 4½ inches high and weighs only 25 pounds.

Servicing can be done by simply removing the top and bottom covers. Good heat dissipation is achieved by mounting the subchassis directly to the housing and placing the main heat-producing components close to the outside cover.

The standard receiver of this unit can be used with any one of four available power supplies; with either of two transmitters—of 30 or 60-watt RF output; and with either of two selectors, transistorized or mechanical. Request NP 1400.

•

FIVE-PASSENGER ELECTRIC VEHICLE—Cushman Motors, a subsidiary of Outboard Marine Corp., announces its new Model 734 three-wheel electric Truckster for transporting industrial personnel.

The Cushman 734 Truckster unit will carry four passengers, and an operator, and also has a 45⅝-inch by 41½-inch flatbed with stake racks. This model is rated at 1,000-pound payload capacity plus the operator and one passenger.

The unit will operate in passageways as narrow as 50 inches and will deliver up to 50 miles without recharging. The unit's rear seat is removable to allow space for transporting additional equipment.

This heavy-duty Truckster with personnel carrier features a 2.5-hp, 36-volt dc motor and a steel-reinforced positive belt drive. It has an automotive type steering gear with a wheel diameter of 15 inches. The suspension is coil springs both front and rear, with shock absorbers on all springs.

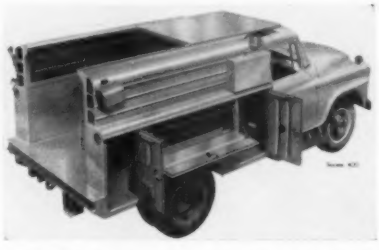
A speed selector switch offers two forward speeds and one reverse speed, controlled by an automotive-type pedal to start and stop the vehicle.

In size, the Cushman 734 Truckster and personnel carrier measures 47½ inches wide, 124½ inches long and 46½ inches over-all height. Request NP1401.

•

LINE CONSTRUCTION TRUCK BODY—The McCabe-Powers Body Co. has announced the 1960 version of its Series 400 line construction and maintenance body.

Company vice president, Brooke Daly, says, "This unit is designed for maximum efficiency with a two or three-man crew. It has been adopted as the primary 'workhorse' for both small and large utility operations to supplement heavy-duty units, and to handle secondary line construction and maintenance work."



This body unit may be furnished with the McCabe-Powers "Pole-Master" hydraulic derrick for handling poles up to 40 feet in length. Optional equipment includes the "Earth-Master" hydraulic digger, which is suspended from the derrick, and can be used to dig holes 9 inches to 24 inches in diameter by 10 feet 6 inches in depth. A single or double-drum winch, having from 12,000 to 45,000 pound capacity, can also be furnished. Request NP1402.

•

DATA TRANSMISSION UNIT—With the introduction of its 1009 Data Transmission Unit, International Business Ma-

TELEPHONY PUBLISHING CORP.
608 S. Dearborn St.
Chicago 5, Ill.

Please have the manufacturer send me without obligation the literature indicated by the following numbers:

NP1400_____; NP1401_____; NP1402_____; NP1403_____;
NP1404_____; NP1405_____; NP1406_____; NP1407_____;
NP1408_____; NP1409_____; NP1410_____; NP1411_____.

Name.....

Company.....

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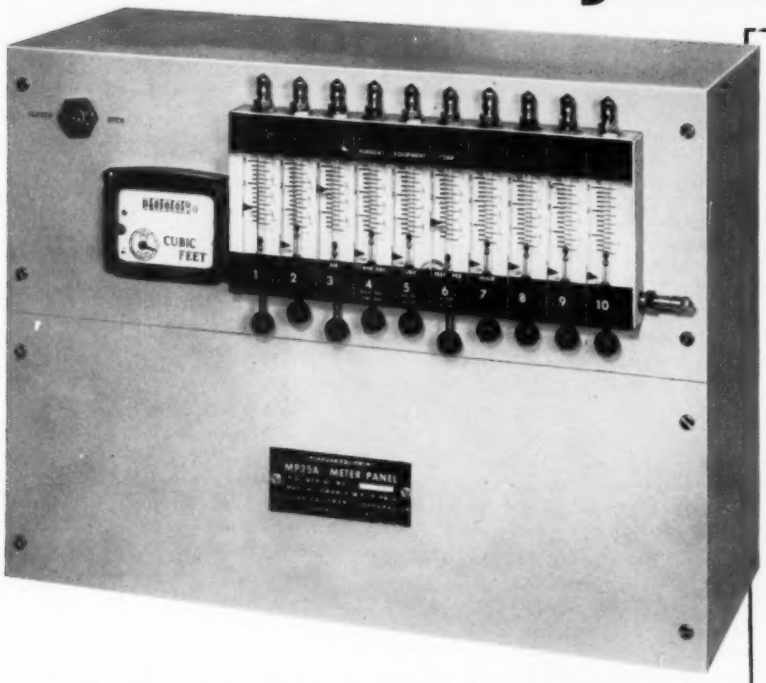
TO LENGTHEN CABLE LIFE AND CUT MAINTENANCE COSTS—

Pressurize your cables



Metering Panel of the PUREGAS Continuous Feed Pressure System. The panel monitors and distributes the flow of pressurized air from the PUREGAS Air Dryer to toll, trunk and exchange cables . . . measures the flow delivered to groups of cables or to individual cables . . . provides convenient central instrumentation.

Air Dryer of the PUREGAS system. This compact unit compresses room air and delivers it under pressure to a storage tank, where it is cooled to near freezing. Compression, storage cooling, then expansion to the lower pressures within the cable reduce relative humidity from 100% at high temperatures to less than 2% at 70°F. Air Dryers and Metering Panels, products of Puregas Equipment Corporation, are available via Graybar.

Toll, trunk and exchange cables all have longer service life and cost much less to maintain when they are:

1. pressurized with dry air supplied through PUREGAS equipment;
2. supplemented with GENERAL MACHINE PRODUCTS accessories.

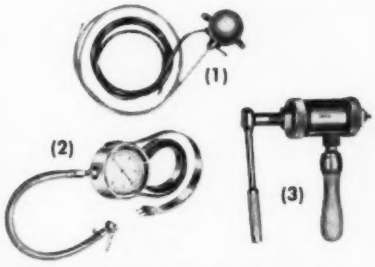
PUREGAS equipment at a central location feeds a continuous supply of dry air under pressure into the cables . . . to keep moisture from reaching the conductors. As air is lost through the minute breaks that usually occur in older cable sheaths it is replaced automatically by dry air from the PUREGAS Air Dryer and Compressor.

Serious breaks along the line, however, cause excessive leakage of air, and are indicated on the PUREGAS Metering Panel.

Using GMP accessories, repairmen then pinpoint location of the breaks—by noting differences in air *pressure* at selected points—and make repairs, usually during normal working hours.

Pressurize to minimize outages . . . to lengthen cable life . . . to cut maintenance costs. PUREGAS and GMP equipment is distributed nationally by GRAYBAR.

Get complete information. For these descriptive folders, phone your nearby Graybar Representative. Or write to Graybar in New York.



GMP Pressure Testing Contactors (1) located at strategic points, monitor pressure throughout the system and aid in detecting leaks. *Pressure Testing Gauges* (2) give precise measurements of pressure. *Pressure Guns* (3) inject compound into cable to make pressure plugs. These, as well as Pressure Testing Ells, Drills, Depressors, Sealing Compound and other tools for pressurized systems, are made by General Machine Products Company and are available via Graybar.

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Towers that stand up!

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NORTH WALES · PENNSYLVANIA

chines Corp. announces that two widely separated computers can exchange information directly over the telephone, at the same time continuing to print out the results of calculations.

The new transmission unit is designed to link the magnetic core memories of solid-state IBM 1401 computers over regular local or long-distance telephone and telegraph lines. It enables two-way communication between computers at the rate of 150 numbers or letters a second.

Gilbert E. Jones, president of the company's data processing division, said, ". . . our engineers have made the computer itself act as a data transmission terminal while still retaining internal processing abilities. It is designed to meet the high-volume processing needs of decentralized businesses utilizing high-speed equipment such as the 1401."

The IBM 1009 enables the 1401 computer to be used as either a data transmission or data receiving terminal, as well as a regular data processing system. Input for transmission can be fed into the computer from punched cards or magnetic tape.

Business or scientific data is transmitted from the core storage of one 1401 to the core storage of another 1401 at the receiving end. Here, the data can be processed and recorded in the form of punched cards, magnetic tapes, or printed documents on the 600 line-a-minute printer.

While information is being transmitted and received, both 1401 systems are free to perform simultaneous tape-to-printer operations. When not in use for sending or receiving, the 1401 can be used for full data processing operations.

The IBM 1009 also allows direct transmission or reception of magnetic tape data at the same 150 characters-per-second rate between a 1401 and an IBM 7701 magnetic tape transmission terminal. An IBM 1401 computer equipped with a 1009 can thus communicate either with a similarly equipped 1401 or with larger IBM data processing systems through a 7701 or another 1401.

Both the 1009 and 7701 operate over dial or leased telephone lines or high-speed telegraph lines. The two also automatically correct reading and writing errors, as well as any errors in transmission, the company reports.

The IBM 1009 data transmission unit is especially designed for use in industries where diversified operations can benefit from centralized data processing facilities. Among these are public utilities, which use such equipment for revenue accounting and transmission of engineering data.

Where company-wide accounting procedures are part of regional or divisional data processing operations, direct data transmission between 1401 systems can eliminate the need for single-purpose transmission equipment, IBM states, and the time and cost of converting data to the particular form transmitted by such equipment.

Transmitting or receiving through the 1009 is under stored program control of the 1401 to which it is connected. With the transmit and receive programs loaded in the 1401s at two locations, the computers are ready for sending or receiving.

When telephone company service is used, transmission begins after a dial telephone connection has been established. The data passes from the 1401, through the 1009, into a modulating subset provided by the local telephone company, and over the communications line. At the receiving station, it passes through a demodulating subset and the 1009 into the core storage of the 1401.

The procedure for transmitting information back and forth between a 7701 magnetic tape transmission terminal and a 1009-equipped 1401 is similar.

The IBM 1009 unit can be used with the Model B 1401 card system and Models C and D 1401 magnetic tape systems. Request NP1403.

•

TELEPHONE CABLE EQUALIZER— Hughey & Phillips, Inc. has begun production of a cable equalizer, Model LE 123, for use with non-loaded telephone circuits which provides for correction of non-uniform frequency transmissions in the range of 35 to 8,000 cycles per second.

The new equalizer is a shunt type, incorporating a continuously adjustable

series resistance. The dial is calibrated in ohms for simplified adjustment procedure. Request NP1404.

•

INSULATION STRIPPER—A new insulation stripper for telephone installers has been developed by Tronco, Inc. The stripper is said to reduce installation time as much as 30 per cent.

A tool with no moving parts, the Tronco insulation stripper works on all types and gauges of plastic insulation. It is designed to remain attached to the installer's hand throughout a complete wiring phase.

The vinyl-covered handle of the stripper bends to fit snugly to the installer's finger. Request NP1405.

•

ELECTRONIC CABLE TESTER—The Seitz Electronic Cable Tester was designed and developed by Dan Seitz who is well known to readers of TELEPHONY through his articles dealing with cable splicing and trouble location. It is manufactured and sold by Chester Morton Electronics, a division of Progress Mfg. Co., Inc.

The Seitz cable tester claims several improvements over conventional methods in trouble location:

Small and compact, and simple in

THE NEW HEAVY DUTY, 1/4" American Beauty ELECTRIC SOLDERING IRON #3125 FOR *out-of-this-world* PERFORMANCE!

Plug-type tip of nickel-coated copper.
Rigid tubular steel casing provides lightweight support between heating element and handle.
Easily replaced heating element—thick mica insulation cuts current leakage.
Lead-wire insulator, screwed to element assembly for added strength.
New design lead-tube insulator protects and separates lead wires.
Super-flexible 6-foot cord.
Rugged terminal connector assembly provides cord-strain relief.
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Available with diamond or chisel point; straight or angled casing, as shown. 60 or 75 watts.

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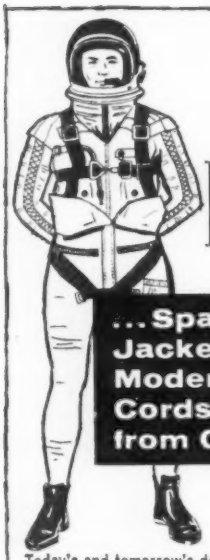

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Today's and tomorrow's demands on your system calls for ever tougher, more durable and trouble free equipment. In cords, that's P.V.C. from COMCO,

Superior to Neoprene in toughness and crack resistance, this P.V.C. (Poly-Vinyl-Chloride) jacketing has other advantages, too. Jacket's smoother inner surface permits conductors to flex freely . . . eliminates binding and fracturing —thus assuring longer noise-free life.

P.V.C. jackets are standard on all COMCO straight cords and Spiraflex Rectractile Cords . . . choice of black or ten colors.

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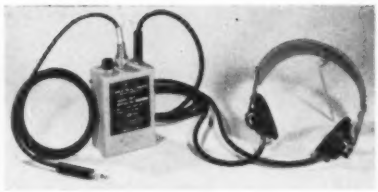


operation, it meets all requirements for locating opens in rural and urban distribution cable, parallel and twisted-pair wire, and inside wire.

It can also be used to locate faults in central office equipment.

The cable tester set can be used with any type tone and exploring coil in locating shorts, crosses and grounds in shielded and metallic sheath cable.

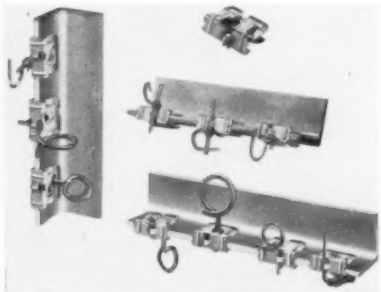
The annoying problem of power line interference with telephone circuits can be quickly detected and the trouble spot pin-pointed with this unit.

The amplifier of the Seitz Cable Fault Finder is equipped with a short hand probe and an overhead line probe. The hand probe is used for station work and pair identification. The overhead line probe is used to locate the general area of trouble on the line without actually placing the probe against the cable. When the probe is held in the line area, the amplifier will pick up the tone. When the general trouble area is located, the probe can be moved along the sheath of the cable to detect the trouble.

There is no necessity to cut insulation to locate faults. This set saves both time and money, Mr. Seitz states. Request NP1406.

•

BEAM CLIP—Recently announced by Erico Products, Inc. is the new "B" beam clip, designed for and approved for use with threaded or unthreaded Bridle Rings, Drive Rings and other low voltage cable, wire and copper thermostatic tubing supports.



Recommended Maximum Load Limits: Horizontal pull, 30 pounds; vertical pull, 50 pounds.

This clip will fit any flange from ⅛ inch through ½ inch thickness regardless of flange taper. Request NP 1407.

•

FIBERGLAS FLOOR TO PROTECT TELEPHONE EQUIPMENT FROM VIBRATION—When a three-fold increase in the size of PBX telephone facilities was necessitated by plant expansion, Pall Corp., Glen Cove, N. Y., had to find, or make, a vibration-free room. The only available space was a room, 18 by 20, directly above a 2-feet-high, 2-feet-wide, steel rolling mill and a 10-foot, one quarter-inch Cincinnati shear. With this difficult problem, it was decided to use a technique of vibration damping employed successfully by one of the Pall Corp., subsidiaries, Fibrous Glass Products, Inc.

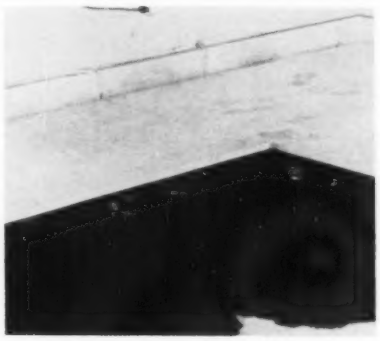


Fig. 1.

Fibrous Glass Products manufactures resin-bonded Fiberglas, which it forms and molds into a wide variety of shapes including flat board. These boards are used in all types of construction for vibration damping. For instance, the company reports, one recent job was the installation of 10,000 square feet of such board, 4 inches thick, under the concrete slab of a building housing delicate instruments and in which critical laboratory experiments were to be performed. With this background, the company states it became a simple matter to provide a floor which would be capable both of supporting the heavy PBX equipment and of damping outside vibrations.

The original floor consisted of a single layer of quarter-inch plywood laid over a basic subflooring. This was sufficient when the room was used for storage. The subflooring was directly over the beams. Some of the plywood veneer had begun to warp, but this was not considered a problem. Nor was the accumulated dirt significant, except that the loose pieces had to be swept out.

The plans called for completion of half of the room at one time, moving of existing telephone switching equipment to the newly laid portion, then completion of the second half of the room. Afterward, additional telephone equipment was to be brought in.

Initial preparation consisted merely of sweeping the floor. Using ordinary asphalt tile cement, right out of the

drum, two men started from one corner to lay a thin coating over the existing floor. As they finished a large enough portion, they laid several sections of Fiberglas board in place *(Fig. 1)*. Each Fiberglas panel measured 3 feet by 5 feet and 1-inch thick.

The first half of the floor was covered first with the Fiberglas panels. Once completed, the two men moved back to their starting point and covered the Fiberglas panels with the cement, troweling it on as before. As soon as they had spread a section large enough for a 4-by-8 plywood section, they laid the plywood, ¾-inch thick, on the covered area. Both the Fiberglas panels and the plywood were placed at a distance of 1 inch from the nearest vertical walls. This was to minimize transmission of vibration through the walls.

After all the plywood for the first half of the room was in place, it remained only to lay linoleum on the plywood *(Fig. 2)*. It too was placed an inch from each vertical wall.

Fig. 2.

Upon completion of the first half of the room, the existing telephone equipment was moved to the finished portion. Then the rest of the room was finished in the same way as the first half, starting with a sweep-up.

As the workmen reached the ends of the room, they had to cut some panels to fit. The Fiberglas was easily cut with a sharp knife; the plywood was measured and cut on a convenient radial saw. Request NP1408.

•

CONDUIT AND PIPE SEGMENT BENDER—Greenlee Tool Co. announces the addition of their No. 777 lightweight segment bender for 1¼-inch through 4-inch aluminum or steel conduit and pipe. Weighing only 65 pounds, exclusive of shoes, it can be easily transported and operated by one man.

The design of this bender makes it possible, with a few optional parts, to do 90° one-shot bending ½ inch through 2 inches, and thin-wall (EMT) bending ¾ inch through 2 inches.

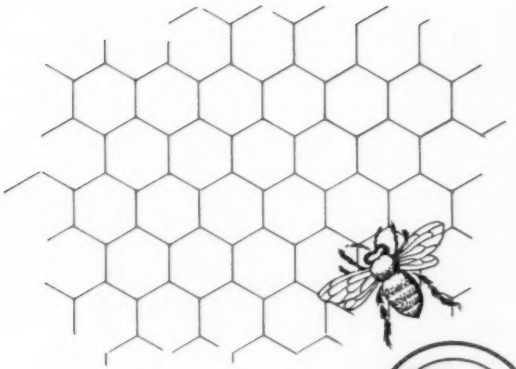
The bender is powered by a two-speed, 10,000 psi hand pump, and can also be operated with a power pump for faster operation. The ram develops 27 tons of pressure, and will even bend extra-heavy schedule 80 pipe, the company states.

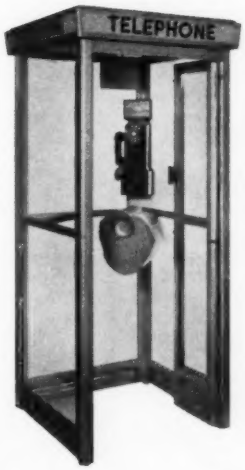
The bender features a one-piece frame of high-strength aluminum, one set of aluminum pipe supports for all pipe sizes, and quick-locking pipe support pins. Request NP1409.

•

PORTABLE POWER DIGGER—A new portable power digger, produced by The Speed King Mfg. Co., provides what is termed a "fast and easy" way to dig 3-inch to 7-inch holes in all types of soil up to 32-inch depths or more.

PRO B T in construction





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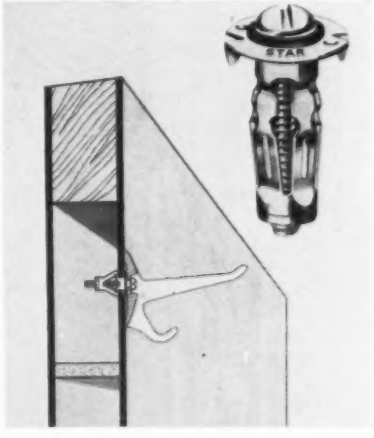
Called Porta-Power, the digger is designed for one-man operation, and is powered through 2-foot flexible cables quick-clamped to the 12-volt electrical system of a car, truck or tractor. With the engine running to maintain generator charge, the company says the Porta-Power digger does not drain the vehicle's battery.

An extension to the 32-inch steel auger will provide up to 48-inch hole depth, thus making this digger suitable for rugged and heavy-duty service, such as is required in construction work, fencing, ice drilling, and other projects. Request NP1410.

•

EXTRA-SHORT SCREW ANCHOR — Star Expansion Industries has announced its new XS Wallgrip, an extra-short screw anchor for fastening fixtures to hollow walls, hollow doors, or to thin room dividers and other partitions where surfaces are one-quarter inch thick or less.



It is designed, Star says, to securely fasten light or medium-weight fixtures and to remain in place when fixtures are removed for cleaning or replacement. Request NP1411.

Clark Retires From Rochester Company, 2 to New Posts

F. Mark Clark, vice president for customer relations of the Rochester (N. Y.) Telephone Corp., retired on Sept. 1 after 32 years of service with the company.

F. M. CLARK

His successor as customer relations manager will be Justin M. Williams, the company's present traffic manager. John F. Banks has been promoted to traffic manager from his present position as district traffic superintendent-city.

J. M. WILLIAMS

Changes were announced on Aug. 18 by George S. Beinetti, senior vice president for operations.

Mr. Clark is a native of Malone, N. Y., where he attended elementary and high schools. He is an alumnus of Davenport (Ia.) College and attended the University of Rochester evening school and the Rochester Business In-

stitute. He began his work with the Rochester company as a salesman in 1927. After holding several positions in the commercial department, he became commercial superintendent in 1955, and vice president for customer relations in 1959.

Mr. Clark was president of the Genesee Chapter of the Telephone Pioneers of America in 1959. He is a past director of the New York Telephone Association.

Justin M. Williams, the new customer relations manager is a veteran of 30 years of service with the company. He joined the Rochester company in 1930 as a salesman. Since that time, he has held many positions in the commercial department, becoming traffic manager in 1959.

J. F. BANKS

Mr. Williams attended elementary and high schools in Franklin, Penn., and East Cleveland, O., before graduating from East High School in Rochester. He later attended the University of Rochester both as a resident student and as an evening school student. He is president of the Genesee Chapter of the Telephone Pioneers of America.

John F. Banks, the new traffic manager, is the former traffic superintendent for the New York Telephone Co. (Bell) in Buffalo. A native of Dunkirk, N. Y. and an alumnus of Syracuse University in the class of 1942, he joined the New York Telephone Co. as a traffic student in Albany in 1946 after serving four years in the Army Air Force during World War II.

Mr. Banks served the New York company's traffic department in Albany, Monticello, Ithaca, Rochester and Buffalo before going to the Rochester Telephone Corp. on Apr. 1 of this year as district traffic superintendent-city.

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Report on Metals Usage By Communications Industry

The United States communications operating industry, which incorporates both telephone and telegraph services, used approximately 35,650 tons of steel and 258 million pounds of copper during 1959, the Business & Defense Services Administration, U. S. Department of Commerce, has estimated.

The estimate was made by BDSA's Communications Industries Division as an aid to mobilization planning, and showed that the steel went largely into steel line wire, strand for supporting cables, and guys for pole line construction. Cables, copper line wire, copper clad line wire, and drop wire were principal copper consumers.

One hundred of the largest telephone companies, comprising about 94 per cent of the industry, were surveyed. They reported actual use of 33,450 tons of steel and 242 million pounds of copper. More than 85 per cent of the copper is purchased in rod or bar form by the wire and cable suppliers of the industry.

The division said that the figures were the first that had been obtained on steel and copper consumption by the communications industry since 1952, when Korean War controls were still in effect, and that these 1959 figures give the latest requirements for these metals. Since 1952, use of steel has decreased about 37.5 per cent, while copper consumption has gone up 66 per cent in the communications industry.

Continued expansion of the industry is indicated by the figures. The telegraph industry is expanding due to increased military contracts and other service. Most of their line facilities are leased from the telephone industry.

	Non-Quadded cable[1]	Quadded cable[1]	Steel line wire	Copper[2] line and tie wire	Copper clad wire	Drop wire	Strand[3]
Million conductor feet	153,540	1,369	—	—	—	10,790	—
000 feet	—	—	16,489	—	—	—	194,063
Copper (000 lbs.)	229,382	4,549	—	3,078	2,244	19,165	—
Steel (tons)	—	—	8,244	—	—	—	27,390

[1]The quadded and non-quadded cables are made up of #19, #20, #22, #24, and #26 ga. wire AWG.

[2]Only the copper in copper-clad wire considered.

[3]Strand is generally 5/16 or 3/8 inch.

Telephone plant investment now exceeds 26 billion dollars.

The estimated figures on material consumption which are shown indicate the types of outside plant material involved. (Quadded and non-quadded are descriptive of the wire composition of the cable.)

Farthest Arctic Exchange Planned by Alaska Company

The traditional "mukluk telegraph" of the Arctic, the hand-to-hand and mouth-to-mouth means by which Eskimos have sent their messages for centuries past, will be given a modern assist in late October of this year. At that time, the new telephone exchange of Trans-Alaska Telephone Co. is scheduled to go into operation at Kotzebue, Alaska, it has been announced by John E. Field, president of the Trans-Alaska company.

Trans-Alaska Telephone's exchange at Kotzebue will become the farthest north telephone system on the North American continent when the big day comes and the telephones begin talking in this colorful Eskimo village.

The exchange is now being constructed under the supervision of James V. Ditto, vice president of the company, and it is expected to serve some 100 subscribers in the Kotzebue area.

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It will be a modern dial exchange, utilizing the Stromberg-Carlson X-Y system. After careful study of the equipment and the uses to which it will be put in Alaska, Trans-Alaska Telephone has signed a 1.3 million dollar contract for systems to be installed in its exchanges throughout the 49th state.

In addition, the Stromberg-Carlson "Petite" line of colored telephone instruments will go into service in Kotzebue.

The Trans-Alaska company already serves a large portion of Alaska, with exchanges at North Pole, Clear, Nenana, Talkeetna, Kenai, Portage, Soldotna, Homer, Seldovia and Dillingham. Other exchanges are in the process of engineering or construction at Big Delta, Tok, Glenallen, Cooper Landing and King Salmon.

It is noteworthy that many of the Eskimos living in this Arctic village have never seen or used a telephone, but nevertheless, excitement over the plans of Trans-Alaska Telephone is running high, and they are eagerly looking forward to the day the telephones begin to talk at Kotzebue.

Actually, there is no Eskimo word for telephone; however their guttural but fluid language can be adapted to spur of the moment exigencies, and they have coined the word "okoksoon," meaning roughly to talk into a telephone.

Kotzebue is the second largest Eskimo village in Alaska, with a population of some 1,200 and about 3,800 persons residing in the area. The natives out-

John E. Field, president of the Trans-Alaska company which provides telephone service to a large portion of the 49th state.

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ALPHADUCT

number all others in the village by a ratio of 20 to 1. The area, where Eskimos have lived for thousands of years, was discovered in August, 1816 by a Russian navigator, Otto von Kotzebue, searching for a northwest passage sea lane to Europe.

Lying above the Arctic Circle in the shadow of the midnight sun, it presents a colorful picture of native Eskimo life. During the summer months, the sun stands above the horizon 24 hours of the day. The natives still wear the warm fur parkas, they sail their big "oomiak" walrus skin boats off into the Arctic Ocean and the Bering Sea on fishing voyages.

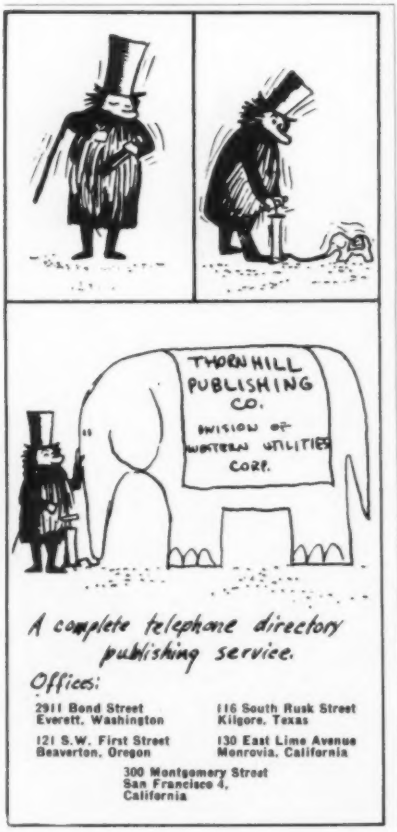
Elderly Eskimo Woman holds first model of "Petite" telephone, to be installed at Kotzebue, Alaska exchange by Trans-Alaska Telephone Co. The new exchange, farthest north on the North American continent, is scheduled to go into service in October.

In the wintertime, when the sea becomes a solid pack of ice, and temperatures drop to 50 below zero, the women dig holes in the ice and dip their fish lines into the waters beneath to find fresh fish for the family table. Reindeer herds in the nearby area provide fresh meat, as does whale, walrus, polar bear and caribou.

The age-old dog sled is still a major means of transportation in winter, and the Eskimos travel unbelievable distances across the ice and snow behind a team of husky dogs pulling heavy wooden sleds. While most of them have never seen a train, the airplane is as common as the sled of their forefathers, and they think nothing of flying to far villages and fishing camps aboard airliners or with bush pilots.

In this land of mingled contrasts, oddly primitive and ultra-modern, the telephone will play a vital role in bringing Kotzebue into closer contact with the outside world. Now, instead of depending on mail planes and the vagaries of Arctic weather, the owner of a trading post, or an Eskimo in his little wooden cabin, may pick up his telephone and order food, medicines or other necessities which may be needed in this far northern outpost of civilization.

It seems to be evident that Trans-Alaska Telephone Co. today has become a part of life in Eskimo Land.



IN THE NATION'S CAPITAL

Continued from page 20

few others, are doomed. Helen Trent shed her last tear last June.

Oddly enough, the soap operas appeared to have succumbed to the assault of the more profitable disc jockeys, rather than to the demands of a more discriminating radio audience. As horrible as some of the old soap operas used to be, when we listen to some of the disc jockeys we may wonder whether this is all to the good and who's ahead.

Telephone Stocks Popular

A good test of relative mass popularity of common stocks is the selection of Monthly Investment Plan (MIP) investors.

American Telephone & Telegraph and General Telephone & Electronics common stocks have made strong gains in popularity with Monthly Investment Plan investors, according to a recent statement by W. L. Russell, business editor for the Pittsburgh *Press*. At mid-year, AT&T had moved up to fifth place in the list of the 50 favorite MIP stocks, from eighth place in mid-1959. GT&E jumped from 16th to ninth place, probably influenced by the recent three-for-one stock split.

General Motors held top spot among the MIP favorites, followed by General Electric, Dow Chemical and Standard Oil (N. J.)—the same order as last year.

Radio Corporation of America, a former top favorite, dropped from ninth to 12th place. Madison Fund (41st), Socony Mobil (47th) and Commonwealth Edison (48th) joined the 50 leaders for the first time, replacing United Fruit, Raytheon and W. R. Grace & Co. Four of the top MIP favorites also led another Big Board ranking at mid-year—the list of companies with the largest number of stockholders. AT&T held its comfortable lead—1,754,000 owners to GM's 785,000. Standard (N. J.) followed with 612,900, then GE with 417,054. U. S. Steel

Answers to Questions On Page 41

(1) The operator will say, "Please ask for Operator 9 if you place your call again today."

(2) The operator will say, "This is Operator 9" and will secure the necessary details. She will enter "AC" in the "spec. inst." space and "9" in the upper right hand corner of the toll ticket, and proceed with the call.

(3) The operator will enter the report and show "CA (time)" on the ticket and will send the ticket to the report charge position.

(4) The operator will enter the report and show the subsequent attempt time on the ticket.

(5) The operator at the report charge position will locate the original cancelled ticket, enter "cov by 2nd tkt" on the back and scratch. She will draw a line through "9" on the second ticket and file with her "CA" report charge tickets.

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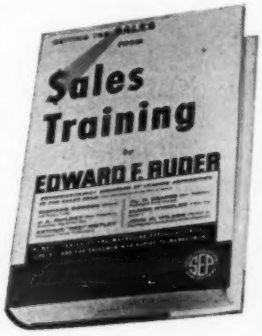

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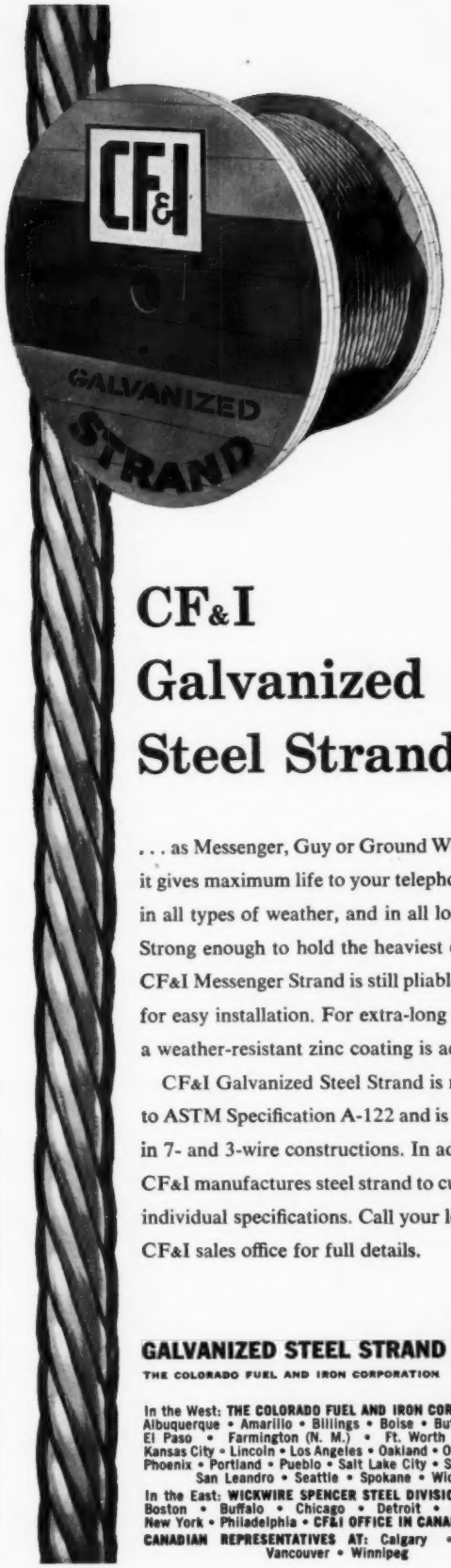

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took fifth place with 274,199. For Standard Oil, the mid-year shareowner total was more than four times that of mid-1940. AT&T owners nearly tripled in those 20 years.

Canadians Told Telephones Have Doubled in 10 Years

Representatives of Canada's 11 major telephone systems gathered recently in Digby, N.S., for the 31st annual meeting of The Telephone Association of Canada.

The management committee of Trans-Canada Telephone System, the organization which provides and maintains long distance telephone service from the Atlantic to the Pacific, also held its annual meeting in Digby. About 100 telephone executives from Canada's 10 provinces attended the meetings, including some of the principal officials of the Canadian telephone industry.

Ralph W. Losie, deputy minister and general manager, Alberta Government Telephones, Edmonton, president of The Telephone Association of Canada, was chairman of the association's meetings. H. G. Young of Montreal, chairman of The Trans-Canada Telephone System and a Bell Telephone Co. of Canada vice president, presided at the meetings of Trans-Canada's committee.

S. H. MORRIS

In his opening address, Mr. Losie told the meeting that the number of telephones in use in Canada has doubled during the past decade. He said: "At the beginning of 1950 there were 2.7 million telephones in service in Canada, and by the close of 1959, there were twice as many—5.4 million. In other words, in the past 10 years, we have added as many telephones as were put in service in the previous 70 years."

Mr. Losie noted that this increase was only partly due to the increase in population as the number of telephones per hundred persons also rose from 20 to 30 during the 10-year period.

The president outlined problems which have faced telephone companies in Canada over the decade, including the ever-present factor of the climate and the growth of both the older cities and swelling suburbs.

He termed the construction of The Trans-Canada Telephone System's microwave network, which is the longest single radio relay network in the world, "a monument to Canadian engineering and construction people." The growing traffic it is carrying—telephone calls and television programs—bears witness to the foresight of the Canadian telephone industry, he said.

The association itself, Mr. Losie noted, is now 39 years old, and planning in the industry has to be on a national, continental and inter-continental scale.

"It is impossible to envisage the recent and continuing development of Canada without a progressive telephone industry," Mr. Losie concluded. "Whether you look to the social or the business life of the nation, you see tremendous reliance on rapid, reliable communications. It is as true of our

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great industrial cities as of our northern outposts. And these communications have to form an integral network—each system is dependent on the cooperation of its fellows."

Delegates decided to hold their 1961 meeting at the Banff Springs Hotel, Banff, Alberta, June 12 to 16.

At the conclusion of the association meeting, the following officers were elected for 1961:

S. H. Morris, president and managing director of the Avalon Telephone Co., St. John's, Nfld., was elected president.

J. E. Richardson of Halifax, N.S., president of the Maritime Telegraph & Telephone Co., was elected vice president.

John A. Dochstader of Ottawa, Ontario, assistant to the president of The Bell Telephone Co. of Canada, was named liaison officer.

Jack D. Hambly, of Montreal, Quebec, was re-elected secretary-treasurer.

WOMAN'S PLACE

Concluded from page 30

that attended the school in Russellville is looking with a great deal of interest and anticipation at a proposal for a 'sales' school. At this 'sales' school, some of the problems that we have faced as service representatives and some of the case work that we have been given to complete for our teacher will be discussed. Only then will we be able to evaluate the knowledge that each of us has gained.

"But one thing is certain. We are firmly convinced that never again will we say, 'Uh-huh, I guess I can help you'—from now on it will be, 'Yes, Sir! I'll be glad to help you.'

"A few of the don'ts that we encountered in our schooling are illustrated in the cartoons accompanying this article. They are rules that apply to all people in public life, not only to service representatives. We must remember that the 'urge to clobber' takes over in all of us when *we* have to put up with discourtesies as represented in these illustrations. 'Front Office Image' can be an actual pleasant reality in—your service representative."

Battle the Blast

"The tallest trees are most in the power of the winds, and ambitious men of the blasts of fortune."—WILLIAM PENN.

AIEE Switching Systems Group Sets Meeting Date

The communications switching systems committee of the American Institute of Electrical Engineers (AIEE) has announced its program schedule for the fall general meeting to be held Oct. 12 and 13 in Chicago.

The committee's first session on Oct. 12 will be a field trip to a trial installation of an experimental electronic switching system, arranged by Bell Telephone Laboratories and Illinois Bell Telephone Co.

According to Harold F. May, chairman of the switching systems committee, technical papers to be presented at this meeting include:

"Field Trial of an Experimental Electronic Telephone Switching System," by A. E. Joel and W. B. Quirk; "Equipment Design for an Electronic Telephone System," by D. C. Koehler; "A Gas-Tube Space Division Network for an Electronic Telephone System," by K. S. Dunlap and R. L. Simms; "Logic Design and Programming an Electronic Telephone System," by J. A. Harr; "A 2.2 Megabit Photographic Store for an Electronic Telephone System," by T. S. Greenwood; "A 16,000 Bit Temporary Memory for an Electronic Telephone System," by J. E. Mack; "Maintenance and Administration Methods in an Electronic Telephone System," by W. Ulrich, and

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"Power Supply and Distribution for an Electronic Telephone System," by D. H. Smith. These authors are all with Bell Telephone Laboratories.

Two sessions are slated for Oct. 13 at Chicago's Morrison Hotel. In the morning meeting, four papers will be presented. They include: "Design of Basic Circuits for Electronic Switching System," by A. F. Perkins; "Role of Test Engineer in Assuring Reliability of Electronic Switching Systems," by G. A. Power; "Logic Schematic Drawings for Electronic Switching Systems," by H. Pitlik, all of Stromberg-Carlson Co., Rochester, N. Y., and "A Survey of Methods of Sorting Letters by Machine," by Dr. M. M. Levy of Levy Associates, Ottawa, Ont., Canada.

The switching systems committee will conclude its fall meetings with an afternoon session on Oct. 13. The program features: "General Survey of Direct Distance Dialing," by A. E. Ritchie; "New Nation-wide Numbering Plan," by O. Meyers; "Arranging Panel and No. 1 Crossbar Systems for DDD," by E. L. Erwin, and "Automatic Number Identification," by D. N. Pennoyer, all of Bell Telephone Laboratories; "Independent's Conversion to DDD," by F. L. Kahn, Automatic Electric Laboratories, and "All Number Calling and World-Wide Foreign Dialing," by C. M. Conway of American Telephone & Telegraph Co.

Two Italian Engineers Study U.S. Operations

Alberto Turco, chief engineer of the Societa Esercizi Telefonici (SET), Naples, Italy, which operates the telephone system in southern Italy, and Alberto Bruno, SET engineer, recently visited the United States on a coast-to-coast tour, to study the organization, budget planning and maintenance practices of American telephone operating companies.

Messrs. Turco and Bruno visited the General Telephone & Electronics Corp., Bell Telephone Laboratories, and the Long Lines Division of American Telephone & Telegraph Co. in New York.

In Washington, D. C., they were guests of the Rural Electrification Administration, Federal Communications Commission and other federal agencies.

On their Midwest tour they visited General Telephone Co. of Indiana, Fort Wayne, Middle States Telephone Co. of Des Plaines, Ill. and Automatic Electric Co. of Northlake, Ill. The trip was concluded at Lenkurt Electric Co., San Carlos, Cal.

The Italian visitors estimated that the number of telephones in Italy will double within the next six years, and they anticipate the budget for the next five years of this telecommunications expansion program will be 150 million dollars.

Steinhauser Named Tex., N.M. Manager For Kearney Corp.

The appointment of Jack Steinhauser as district manager of the James R. Kearney Corp.'s Texas and New Mexico sales territory has recently been announced by the St. Louis, Mo. company. Mr. Steinhauser succeeded E. C. Dwelle, who is retiring. The appointment became effective July 1.

After attending the University of Illinois, Mr. Steinhauser joined the Kearney Corp. in 1935 as a student in the firm's sales training program. The following year he was sent to

Two visitors from Naples, Italy, staff members of Societa Esercizi Telefonici (SET), recently toured the facilities of Automatic Electric Co., Northlake, Ill. Pictured during a discussion are, left to right, F. L. Kahn, director, telephone switching system development for Automatic Electric Laboratories; F. D. Reese, president of AE Laboratories, Alberto Turco, chief engineer of SET, Alberto Bruno, SET engineer and H. C. Jones, vice president and sales manager of AE International.

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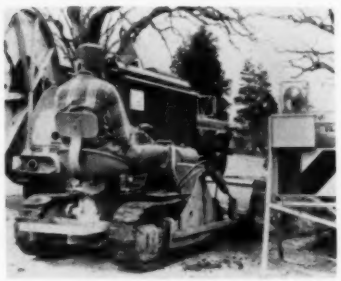

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Austin, Tex. to assist Mr. Dwelle and, with Dwelle, has represented the company in Texas and New Mexico since that time.

Clute Corp. Announces Purchase of Truco

John H. Lowell, president of the Clute Corp., on Aug. 4 announced the acquisition of Truck Equipment Co. of Denver, manufacturers of Truco trade name equipment. Truco, a 10-year-old company, is engaged in the fabrication of special material and personnel handling equipment for the utilities and railroad industries.

The newly acquired company will become a part of the Clute Engineering Division, with the main plant in Denver.

Truco specializes in the production of labor and time-saving equipment, manufacturing custom-built truck-mounted handling devices. The line includes wire laying trailers, hydraulic lifts and ladders, powered hole diggers and other heavy equipment.

R. H. Davis Is Motorola's Chief Microwave Engineer

Motorola has named Robert H. Davis as chief engineer of its microwave department. In this capacity, he is responsible for microwave product development, systems engineering and field engineering.

Mr. Davis has been associated with the microwave department since graduating from the University of Minnesota in 1950. He served as a field project engineer for four years, then was appointed manager of microwave systems engineering in 1954. In 1958 he assumed the additional responsibilities of microwave publications.

D. C. Gipson C&D's Houston, Tex. Sales Representative

David C. Gipson has been appointed sales representative for C & D Batteries in the Houston, Tex. area. Mr. Gipson will maintain an office at 5118 Browncroft St.

Previously, Mr. Gipson has been an Army pilot and communications officer. Prior to that he was with the sales department of the Chicago Pneumatic Tool Co.

Glover Raytheon Manager

Kenneth E. Glover has joined the Raytheon Co.'s commercial apparatus and systems division as manager of new business development. Division general manager J. Penn Rutherfoord said the new position has been established to develop fully the division's long range business plans and opportunities and to assist in acquisition studies and negotiations.

Name Two New Managers For Osmose Wood Preserving

William D. Kieber and Scott Hockenbery have been assigned to management posts at Osmose Wood Preserving Co. of America, Inc., according to John L. Surdam, president.

W. D. KIEBER

Mr. Kieber, field superintendent of the Utilities division of Osmose, becomes manager. He has been a member of the Osmose organization for 10 years.

He served during World War II in the Air Force.

SCOTT HOCKENBERY

Mr. Hockenbery moves up from field superintendent to manager of Pole Sprayers, Inc., a wholly-owned subsidiary of Osmose. Mr. Hockenbery has been with the organization since 1952. Previously he was with the Monongahela Power Co.

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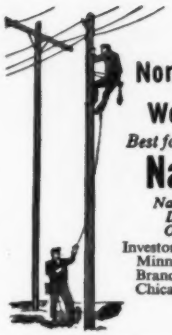
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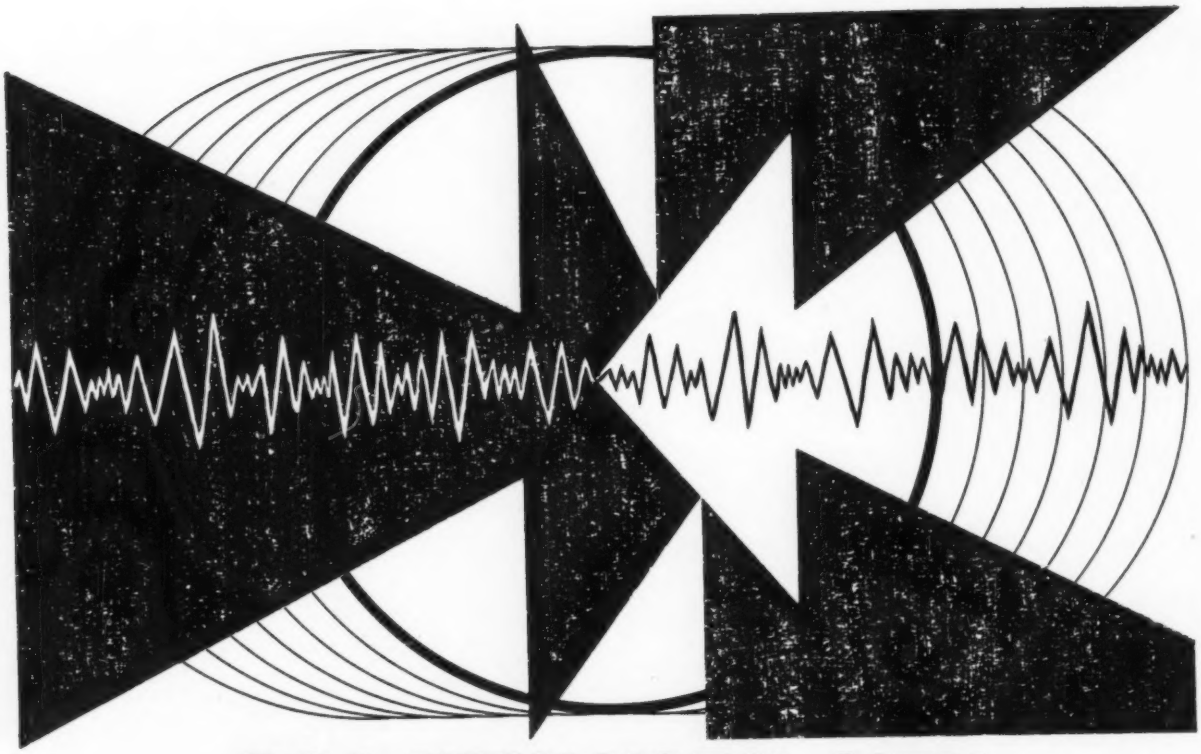

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AMBITIOUS MEN qualified as Station Installers, Equipment Installers, Cable Splicers, Linemen. Work in Midwest. Harris-McBurney Company, Inc., P.O. Box 267, Jackson, Mich.

OUTSIDE PLANT FOREMAN, experience in supervision and REA spec. desirable. Permanent position, good working conditions and benefits. All replies held confidential. Write Kingdom Telephone Co., Auxvasse, Mo.

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VOICE FREQUENCY RINGER

1000/20 CYCLE WESTERN ELECTRIC

#X-61820-A (Four Ringing Circuits)

#X-61820-B (Two Ringing Circuits)

Dimensions; X-61820-A (Including Cabinet)
Height = 28" Width = 22¼"
Depth = 17"

X-61820-B (No Cabinet)
Arranged for 19" Relay Rack Mounting and takes 14" Vertical Rack Space.

Condition: Reconditioned like new (New spare parts)

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Typical Circuits using this Equipment are:

Composited Circuits • Repeatered Circuits
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Ringer Equipment X-61820-A is generally used where four or more ringing circuits are required. Its application with triple voice-frequency repeaters and with "C" Carrier is typical. Ringer Equipment X-61820-B, provides only two ringing circuits and is used on such circuits as a single voice frequency repeater where one of the ringing circuits is used with the bridging circuit to provide signaling at the repeater location.

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Submit confidential résumé including past experience in strict confidence to:

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Index to ADVERTISERS

	Page
Acme Electric Corporation	—
Acme Visible Records, Inc.	—
Advanced Communications Engineering	62, 63
Airtronics International Corp.	—
Alphaduct Wire & Cable Co., The	51
Altec Lansing Corp.	14
Aluminum Company of America	—
Amchem Products, Inc.	—
American Electrical Heater Co.	45
American Steel & Wire Co.	—
American Telephone & Telegraph Co.	—
Anaconda Wire & Cable Co.	—
Andrew Corporation	—
Ansonia Wire & Cable Co., The	—
Arps Corporation	—
Atlantic Cresoting Co., The	59
Automatic Electric Sales Corp.	34-35
Baker Wood Division	59
Barber Advertising Specialties, Walt	58
Bartlett Tree Experts	—
Bell Telephone Laboratories, Inc.	15
Benner-Nawman, Inc.	47
Berry & Co., L. M.	18
Bethlehem Steel Co.	—
Biddle Co., James G.	—
Bishop Manufacturing Corp.	—
Bohnsack Equipment Co.	—
Brand, Wm.—Rex. Div.	—
Brown Mfg. Co.	—
Brown Wood Preserving Co.	—
Buckeye Telephone & Supply Co.	62
Buchart Associates	—
Budelman Electronics Corporation	48
Burgess-Manning Company	—
Burroughs Corp.	—
Butler Manufacturing Co.	—
B. Y. Dial Service	—
C&D Batteries, Inc.	—
Cabaniss-Pogue Co.	59
Cable Construction Co.	59
Cable Spinning Equipment Co.	—
Calculagraph Company	—
Chance Co., A. B.	—
Charles Machine Works, Inc.	—
Cleveland Inst. of Electronics	—
Clifton Appraisal Co.	—
Collins Radio Co.	—
Colorado Fuel & Iron Co., The	53
Commercial Cord Company, Inc.	46
Communication Equipment & Engineering Co.	38
Comptometer Corporation	—
Cook Electric Company	—
Copperweld Steel Co.	—
Crane, Inc., Carl C.	59
Cushman Motor Works, Inc.	—
Dahl Co., Inc., George W.	—
Danish Import	—
Davis Construction Co.	59
Davis Manufacturing Co.	—
Dial Haven, Inc.	—
Diamond Expansion Bolt Co.	57
Dillon & Co., Inc., W. C.	—
Donnelley & Sons, R. R.	—
Duo-Safety Ladder Corp.	—
E. & C. Contracting Co.	—
Everstick Anchor Co.	56
Exide Industrial Division—The Electric Storage Battery Co.	—
Fitchburg Engineering Corporation	—
Floor-Con	—
Foley Construction Co., Robert E.	59
Ford Motor Company, The	—
Gagne Enterprises, Inc.	—
General Cable Corporation	—
General Electric	—
General Insulated Wire Works	—
General Machine Products Co., Inc.	—
General Telephone Directory Co.	—
Gladwin Plastics, Inc.	—
Gould-National Batteries, Inc.	—
Graybar Electric Co.	43
Haley & Co., R. G.	—
Hallamore Electronics Co.	58
Harris-McBurney Company	59
Henkels & McCoy	59
Highway Trailer Company	—
Hirsch Organization, Inc., Gustav.	—
Hitachi Ltd.	—
Holan Corp.	—
Indiana Steel & Wire Co.	39
International Business Machines	—
International Teletronics	—
Irwin-Auger Bit Co.	—
Johns-Manville	—
Kearney Co., Jas. R.	—
Kellogg Switchboard & Supply Co.	6-7
Kennecott Wire & Cable Div.	—
Keystone Steel & Wire Co.	—
Killoren Company	59
Klein & Sons, Mathias	—
Kohler Co.	—
Koiled Kords, Inc.	—
Kneisley Electric Company, Inc., The	53
Koppers Co., Inc. Wood Preserving Div.	59
Leich Sales Corporation	10-11
Lindsay Telephone Supply Co.	55
Line Equipment Sales	63
Lorain Products Corp., The	—
Lynch Communications Systems, Inc.	49
Magnolia Chemical Co., Inc.	—
Mast Directory Co., LeLand	63
McCabe-Powers Body Company	—
McGrath Engineering, Inc.	59
Mead Specialties Company	57
Minnesota Mining & Manufacturing Co.	—
Monsanto Chemical Co.	—
Organic Chemical Div.	—
Plastics Div.	—
Morrison-Pelsue Co.	—
Motorola Communications & Electronics, Inc.	17
Mullen Construction Co.	62
Murphy Engineering Laboratories	59
Natco Corporation	—
National Pole & Treating Div.	59
National Standard Co.	—
National Telephone Supply Co.	66
Neubauer Mfg. Co.	—
Neuses, Inc., P. K.	57
North Electric Company	12-13
Okonite Company, The	—
Onan & Sons, D. W.	—
Orangeburg Manufacturing Co., Inc. Div. of The Flintkote Co.	—
Osmose Wood Preserving Co.	—
Owens-Illinois	—
Page & Hill, Inc.	—
Panhandle Electric Sales, Inc.	9
Penta Wood Products, Inc.	—
Phelps Dodge Copper Products Corp.	—
Philco Corporation Gov't & Industrial Div.	—
Plastic Wire & Cable Corp.	—
Plastimayd Corporation	—
Porter, Inc., H. K.	—
Power Unit Sales Co.	63
Precision Multiple Controls	—
Preformed Line Products Co.	—
Puregas Equipment Corp.	—
Radio Corporation of America	60
Radio Frequency Labs, Inc.	—
Railway Communications, Inc.	50
Ramset Fastening System	—
Rawlplug Company, Inc.	—
Raytheon Company, Equipment Div.	—
Recordak Corp.	—
Reichhold Chemicals, Inc.	—
Reliable Electric Company	4-5
Remington Rand Div.	—
Republic Creosoting Company	—
Reynolds Metals Company	—
Rohn Manufacturing Co.	—
Rolatape, Inc.	—
S & G Manufacturing Co.	—
Schauer Mfg. Co.	—
Semco Sales & Service, Inc.	—
Seymour Smith & Son	—
Sherron Metallic Corp.	—
Sierra Electronics Corp.	—
Sloan, Cook & Lowe Co.	59
Stainless, Inc.	44
Stampings, Inc.	—
Sterile Telephone Corp.	—
Stewart Bros.	—
Stromberg-Carlson	2-3
Superior Cable Corporation	—
Suttle Equipment Corporation	—
Tanner Co., O. C.	—
Taylor-Colquitt Co., The	14
Telectric Co.	61
T.E.I. Corp.	63
Tele-Wire Supply Co., Inc.	—
Tele-Muff Co.	56
Teletype Corporation	—
Templeton, Kenly & Co.	—
Thornhill Publishing Co.	52
Transandean Associates, Inc.	—
Truck Equipment Company	—
Tudor & Yager, Inc.	59
Union Carbide Plastics Company	—
United Electric Controls Co.	—
U. S. Cable Constructors, Inc.	—
United States Independent Telephone Association	16
United States Instrument Corp.	65
United States Motors Corp.	—
United States Steel Corp. American Steel & Wire Co.	—
Universal Controls Corp.	54
Utilities Contracting Co.	—
Utility Equipment Co.	63
Utility Service Co., Inc.	—
Utility Tool & Body Co.	59
Warren Mfg. Co., The	—
Weikel Line Company	63
Western Electric Co.	—
Whitney-Blake Co.	—
Williams Inspection Co., Inc., A. W.	59
Winders & Geist, Inc.	—
Wiremold Co., The	—
Wyoming Valley Equipment Div.	—
York-Hoover Corporation	—

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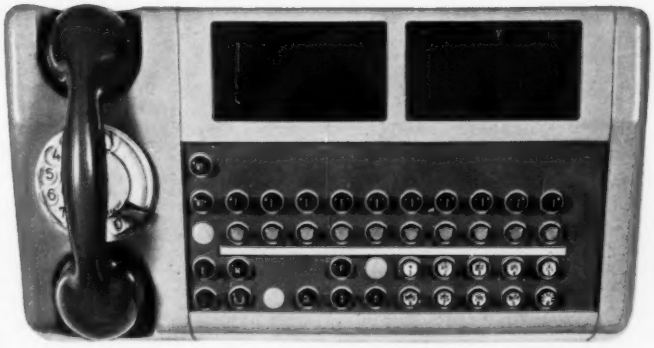

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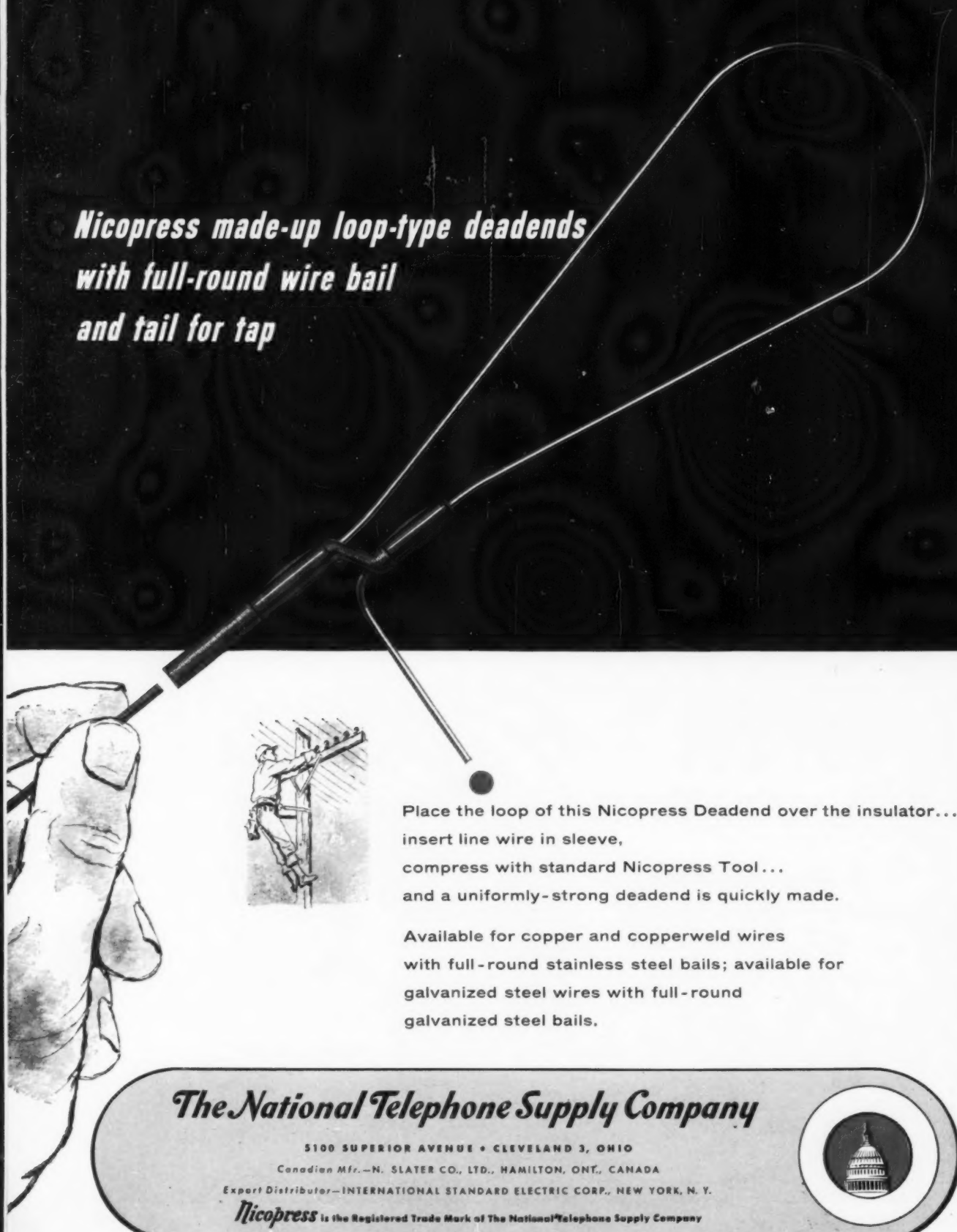

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